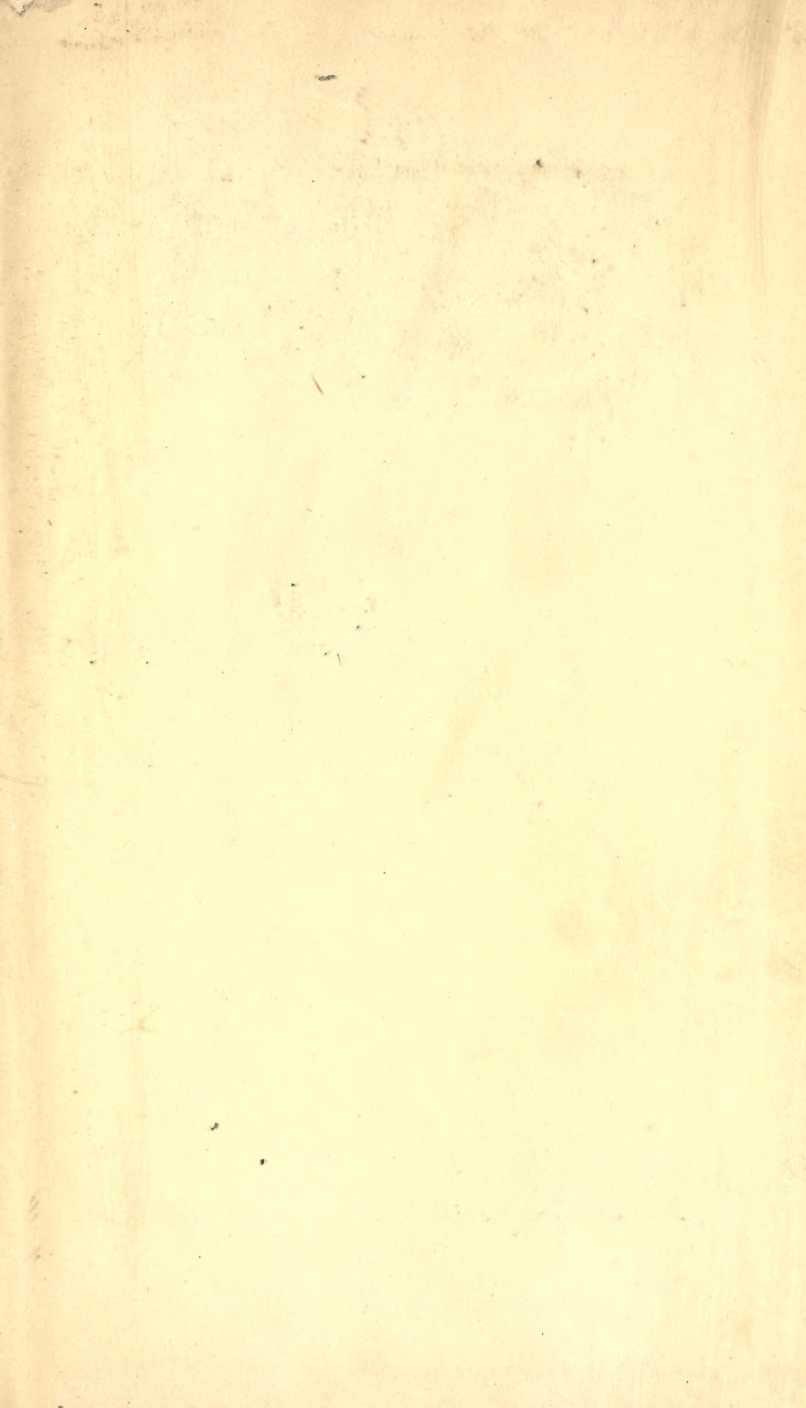




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Science and Sentiment

WITH

OTHER PAPERS, CHIEFLY PHILOSOPHICAL

BY

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This Volume is Dedicated

TO

THE REV. WILLIAM WATSON ANDREWS,

AND

PROFESSOR LYMAN HOTCHKISS ATWATER, D.D., LL.D.,

COMPANIONS OF THE AUTHOR'S EARLIEST

PHILOSOPHICAL STUDIES,

AND

FRIENDS OF HIS LIFE.

PREFACE.

THE papers which compose this volume have been already given to the public, either as lectures or critical essays. They are philosophical in their themes, but not severely philosophical in their mode of treatment. Most of these themes are of present and active interest to the minds of thoughtful men, and are likely to occupy their attention for the future. By the advice of some of his friends, the Author has collected them for republication, as, in some sort, “tracts for the times.”

N. P.

YALE COLLEGE, July, 1882.

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SCIENCE AND SENTIMENT.

I.

SCIENCE AND SENTIMENT.

A POPULAR ESSAY ON A RECONDITE THEME.

MUCH has of late been said and written concerning a supposed necessary antagonism between *Science* and *Sentiment*, or *Sentimentalism* (as it is often called). A few examples will best illustrate this antagonism as it is understood by those who recognize and accept it.

A stranger comes to my door, and asks relief. It is the impulse, of Sentiment to give him the relief for which he asks, and which he seems to need. But Science reminds me that long experience has established the principle that relief given in this way in the long-run does more harm than good; that no truly scientific man, much less a truly scientific woman, would think of doing such a thing. Yielding to the direction of Science, I send the stranger to the alms-house, or to the secretary of some relief association.

Sentiment, we are told, in the old times, encouraged the poor and sick folk to gather about the church-doors, or lie along the wayside, that they might move the pity, and receive the alms, of their fellow-men. Science has taught society to gather them into asylums and hospitals, where healing and relief may be dispensed with wise judiciousness, with neither waste nor fraud, nor encouragement to idleness or imposture.

Sentiment would dictate that a prompt and generous relief should be supplied to all who are in distress,

especially if guiltless of crime, and that, to such persons, alms-houses and homes for the friendless should be made comfortable if not attractive houses of solace and rest. Science lifts up her voice against lavish and indiscriminate public charity, and refers us to the authoritative principles in respect to the cure and relief of pauperism and misfortune which she has matured from the verified experience of many generations.

Sentiment would impel the parent to give his child whatever he cries for ; but Science, which in this case we call common sense, tells him that this is certain to spoil the child. Sentiment would incline a father to give his son a large outfit, or indefinite credit, when he comes of age ; but the wisdom of both reflection and experience teaches that it is better for the son and the community that he be largely thrown upon his own resources.

Sentiment would impel two young persons to marry as soon as they take a liking to one another, regardless of age, adaptation, health, or the means of subsistence. Science rudely steps in between them, sternly forbids the banns, and reads a solemn lecture to the parties upon the sin against society and humanity of contracting an early or an improvident marriage.

Sentiment asks for unlimited credit and the indefinite deferring of pay-day. Science affirms, that unless credit is restricted, and payment is enforced, both lender and borrower will be ruined.

Sentiment charms the heart of the people by saying that indefinitely deferred promises to pay, by the best government in the world, ought to be and therefore is the best money in the world. Science cuts short its harangues by the argument, that, if this were true, all the world would be eager to take this money at a premium.

Sentiment demands free trade on the one side, because

every man desires to buy in the cheapest market, and protection on the other, because home industry ought to be encouraged. Science rejects such arguments, and calls the free-trader and the protectionist a sentimentalist, each, in his turn, for using them.

Sentiment urges that every man should vote himself a farm as his natural right; but Science demonstrates, that, if this were allowed, the supply of farms would soon be exhausted, and the farms themselves would not be worth the cost of a vote — except of refusal.

Sentiment claims that the profits of labor and capital should be divided by law; but Science contends, that, if the demands of Sentiment were allowed, there would be scanty profits to be divided; that capital would vanish like a mist, and labor would beg for employment upon any terms.

Sentiment pleads for equality of condition and advantages to all men. Science demonstrates that equality of rights should be conceded, but that equality of condition, in respect of wealth, or influence, or knowledge, or honor, or culture, is neither possible nor desirable under any conceivable circumstances, and that the men who expect or promise it are either deluded dreamers or knavish deceivers.

Sentiment *feels*, or feels certain, that women ought to vote, and makes eloquent appeals to man's chivalrous sensibilities, as well as to his homage to the right. Science knows by her dry light that government is altogether a practical matter, which does not concern itself with sentimentalities of any sort, but simply with the wisest adaptations to a limited number of attainable ends.

Sentiment is outraged at the wrongs of the inferior or depressed races, and protests with passionate appeals against their forcible subjection to the rule of the races

which are orderly, industrious, cultivated, and Christian. It declaims about the wrongs of the Indian, the African, and the Irish. But Science coldly reasons, that, in the struggle for existence, the weakest nations must inevitably go to the wall; that it is inevitable that the intelligent should compel the ignorant, the civilized should displace the savage, and the Christian and refined should subject the lawless and rude to obedience and civilization, and do this, if necessary, by violent methods,—by wholesale massacres and bloody lessons which centuries of horror and hate shall not forget. So Carlyle and Froude justify the measures which have desolated Ireland. So does the modern scientific historian approve as wise, because necessary, the policy of England in the East Indies. So the instructed student is taught to accept as the inevitable conditions of progress many of the gigantic crimes which nations have perpetrated against nations.

Sentiment would settle all questions of social and political economy, of exchange and property, of law and government, of human rights and duties, by passionate and final appeals to what it calls the instincts and feelings. Science would set aside the feelings altogether, and found its conclusions solely on reasonings and calculations in respect to the practical workings of laws and institutions. Upon all these subjects, Sentiment enforces its feelings by eloquent appeals, and not infrequently shrieks and denounces with frantic excitement. Science analyzes and reasons with cool and sometimes provoking serenity, and adheres to its conclusions with dogged and tenacious confidence.

I have taken my examples thus far from the field of political economy and social science, because it is in this field that the opposition between Science and Sentiment has been most frequently and sharply made.

Indeed, if I am not mistaken, the appellation "Sentimentalist" was first applied, by the devotees of political economy and of political science, in the way of gentle but slightly supercilious reproach. The term has now become a stock word in these circles, and, if not a cant term, is very convenient, at times, in the place of an argument.

A few examples from other quarters may show that the contrast between Science and Sentiment has been made in other fields of speculation no less important than Political Science.

In Physiology, Science urges that all the analogies point to the conclusion that life is but another name for the co-ordinated functions of a material structure, and that what we call the conscious and sensitive spirit is but a higher form of organized matter. It cannot deny the inference, which it may not care or may not dare to utter, that what men call the soul ceases to exist with the body, whether it be the body of a living animal or a living man.

Sentiment shrieks with horror at this revolting conclusion. It asserts its longing after an immortal life, and its instinctive abhorrence of the extinction of man's being. It reaches out its arms to embrace the loved and lost, and it fancies that it feels their loving embraces in return.

Science bids Sentiment be still with its nonsense and protests, and gravely and grimly proceeds to analyze and expound the arcana of life and spirit after some ultimate formula of three or more capital letters with very high indices.

Another kind of science—we hardly know how to name it—substitutes the immortality of the species, so far as the last edict allows it to believe in a permanent species at all, for the immortality of the individual. It substitutes the unending progress of humanity for the

continued life of the individual man. When Sentiment is chilled and unsatisfied, Science re-assures her with a splendid personification of the race as never dying, or as gathering into its immortal existence all the disciplined thought and noble emotion of all the heroic and self-sacrificing lives of the past. This imposing abstraction of the schools it arrays in the gorgeous drapery of high-sounding words, and, setting it up in a flowery bower of showy imagery, it tries to pass off the hideous skeleton for a living and breathing existence. Sentiment recoils with abhorrence from the ghastly counterfeit, and wails in secret over its lost immortality, and refuses to be comforted.

The Evolutionist makes a loftier flight. He not only tells us what the spirit is, but how it came to exist, with every thing besides. Starting with the singular transformations of the dovecote and the capricious mixtures of the cabbage-garden, rushing back to suggestions of star-dust and the nebulæ, stopping here and there to consider the progressive order of the fossils, finding everywhere in the world of life growth proceeding from simpler to more complex forms of being, and the constant displacement of the weaker by the stronger, — he accepts the formulated laws of *evolution* as a living force, which is competent to solve all the questions of Science concerning the unknown. Or he condescends to accept a blind yet all forecasting energy in a simple yet immensely complex unformulated something, of which nothing more can be defined, than that it is indefinable, or known, than that it must constantly be guessed at, and never guessed aright.

Sentiment is bewildered, and filled with dismay. It stretches out its arms after a person infinitely great, before whom it may wonder and worship. It longs for sympathizing goodness, which it may both love and

trust. But Science *sneers* at Sentiment, if its gravity ever allows it to do so unseemly a thing, or chides its fond and foolish moanings, and bids it content itself with admiring the latest brilliant theory, or worshipping the writer of the last philosophic romance, entitled "A New Theory of The Unknown and Unknowable."

What, pray, has Sentiment to do with Science, when Sentiment itself, according to the "last conquered stand-point of Science," is nothing but a transient tremor of the brain-cells, a rosy blush suffusing for an instant the surfaces of super-refined molecules, a rose-leaf hanging slightly on the stem evolved from some simpler germ, as frail as it is beautiful? —

"Or, like the snow upon the river,
A moment white, then gone forever."

What right has such a fleeting phenomenon as this to plead against the sublime and accepted conclusions of Science, when, in the name of demonstrated truth, she avers that she requires no God to explain the universe, or, if she does, she cannot know him?

Science studies the past history of the universe, and, turning over the record of countless ages, fancies it has come to the starting-point, and cries out, with solemn gravity, "In the beginning there was no intelligent Creator."

She searches the universe now existing, hither and thither and yon, till, wearied with her wanderings, she returns from the outmost verge with the report, "I have found no God!" — nothing, at least, but an unknowable and unlovable somewhat, before which we may guess and wonder. Sentiment, reproachfully but hopelessly, responds, —

"O star-eyed Science! hast thou wandered there
To waft us home this message of despair?"

Science says that it is unphilosophical to pray, that no respectably educated man nowadays thinks of doing such a thing; for it is impossible that the requests of man should effect the slightest change in the phenomena of the physical or the moral universe. Sentiment replies, If a man will learn to pray, let him go to sea; for when there, in either helplessness or fear, he may cry for help, and perhaps will even believe, that, in answer to his cries, a deliverer has appeared walking upon the waves.

Last of all, and in sheer desperation, Sentiment appeals to the conscience, and plants itself upon *duty* as commanding and enforcing its love and trust. But Science contends, and thinks it has proved, that duty is the product of opinion and feeling, and is an entity of very unstable equilibrium, — say of the changing moods of sympathy and law, — that what is right for one man and one generation is wrong for another; that duty is itself a growth, which is continually outgrowing its former self, and has no permanent and solemn authority over the homage and love of man as man.

Such is the position of Science and Sentiment with respect to one another, in the view of many of the adherents of each. Science, on the one hand, is suspicious of Sentiment, and Sentiment, on the other, abhors Science. Science denounces what it calls “sentimentalism,” and Sentiment is repelled by definition and experiment. The two regard each other as natural and eternal enemies. It would seem that this attitude of suspicion and hostility must be unnatural, and that some method may be discovered by which the strife may be adjusted.

Some would terminate it by an armed neutrality of the parties. They assume that the two are incommensurable quantities, — forces, which, in their nature, are

mutually repellent. Their counsel to each one of the parties is simply to let the other alone.

Somewhat, though not exactly in this strain, writes one who claims to be foremost in science,—so far advanced, indeed, that he claims the right to speak with authority *for the friends* of science, and *to* those whom he counts as its foes.

“Men of science have but one desire,—to know the truth: they have but one fear,—to believe a lie; and if they know the strength of science, and rely upon it with unswerving trust, they also know the limits beyond which science ceases to be strong. They best know that questions offer themselves to thought which science, as now prosecuted, has not even the tendency to solve. They keep such questions open, and will not tolerate any unnecessary limitation of the horizon of their souls. They have as little fellowship with the atheist, who says there is no God, as with the theist who knows the mind of God.” “Two things,” says Immanuel Kant, “fill me with awe,—the starry heavens and the sense of responsibility in man. And in the hours of health and strength and sanity, when the stroke of action has ceased, and the pause of reflection has set in, the scientific investigator finds himself overshadowed by the same awe. Breaking contact with the hampering details of earth, it associates him with the power which gives fulness and tone to his existence, but which he can neither analyze nor comprehend.”

“But then it comes to pass,” writes the same eloquent Professor Tyndall, in his address at Belfast, “that, over and above his understanding, there are many things appertaining to man, whose respective rights are quite as strong as those of the understanding itself.” “There are such things woven into the texture of man as the feeling of awe, reverence, wonder; the love of the

beautiful, physical, and moral in nature, poetry, and art. There is that deep-set feeling which has incorporated itself in the religions of the world. To yield this *senti-**ment* reasonable satisfaction is the problem of problems at the present hour; and, grotesque in relation to scientific culture as many of the religions of the world have been and are, it will be well to recognize them as the forms of a force mischievous, if permitted to intrude on the region of knowledge over which it holds no command, but capable of being guided to noble issues in the region of emotion, which is its proper sphere."

These elements, he remarks in another place, "are not opposed, but supplementary; not mutually exclusive, but reconcilable." If the human mind turns to the highest power of feeling as its object, and seeks so to fashion it as to give unity to thought and faith, so long as this is not done "not only without intolerance or bigotry of any kind, but with the enlightened recognition of *that ultimate fixity of conception when unattainable*," we may adopt the direction of Goethe, "Fill thy heart with it, and then name it as thou wilt."

Another writer equally eloquent has spoken recently in a similar strain: "The religious sentiment, like the desire for knowledge, is a phase in the energy of nature." "Its domain is, however, apart from the domain of science. The region of knowledge is commanded by the one; the region of emotion, by the other." All this is established by the great doctrine of cosmic evolution, which has become within the last few years the touchstone of scientific men, even as it has become one of the "conquered stand-points" of science. I shall only say, in way of further preface, that this doctrine no more seems to me than it does to Tyndall to be opposed to the religious nature of man. The religious sentiment, like the desire of knowledge, is a phase of

the energy of nature. We may say of it, as Tyndall has said of science, "Its development is as necessary and as irresistible as the motion of the tides, or the flowing of the Gulf Stream."

To these terms of neutrality not a few are ready to accede. They find in them no humiliation. There are not a few men of feeling who are willing to escape the obligation of giving a reason for their feelings, even if they must concede that their feelings cannot be justified by any reason. Not a few answer the supercilious dogmas of science with their own *stat pro ratione voluntas*. But a policy of neutrality purchased by non-intercourse will never satisfy, and ought not to endure, for the simple reason that the heart can neither love nor trust what the head demonstrates to be untrue. An earnest and thorough man must believe in the reality of what he loves and cares for. It is only in the excitement of the moment that a man can love and hate, and fear and hope what he suspects may be a phantom, or knows that he can only guess at, and must mistake in his guessing. Least of all will a man of science, who by his tastes, his habits, and his life, is a sworn devotee of the truth, be content to play hide-and-seek with his convictions in order to enact the hollow farce of feeling for the sake of feeling.

These two great forces in every individual man and in human society must look each other in the face: they must respect one another's rights, and join hands in mutual alliance. They cannot go asunder, like Lot and Abraham, with the deliberate purpose to cross each other's track as rarely as possible.

My own opinion is, that there is no occasion either for a conflict or an armed neutrality between them, but that, being mutually dependent, they should regard one another as natural allies and indispensable friends.

In support of this view I ask attention to the following considerations : —

1. Science is the offspring of Sentiment. In wonder, says Plato, all philosophy begins. But wonder only arrests the attention, and holds it for a moment. Curiosity follows, and impels the soul, as Tyndall says, to look beneath what the senses observe ; that is, to interpret the phenomena which startle and delight it. The gratification of this impulse kindles it into an intenser flame. The desire for knowledge becomes as imperious as the thirst for power or the thirst for gold, It is only when this desire is supreme and unalloyed, that Science yields its most abundant fruits. As long as Science is courted for profit, or gain, or ostentation, she averts her face, or gives with frowning looks and a reluctant hand. She requires that her devotee should leave all for her sake. The fact that the passion seems so singular to the observer only illustrates its energy. The strangeness of its manifestations is exemplified in the enthusiastic inventor, the starving scholar, the laborious analyst, the microscopic observer, the patient encyclopedist, and the tireless explorer. The angers and jealousies and strifes of men of science, like the quarrels of lovers, only betoken the ardor of the sentiment by which they are moved.

Science is also stimulated by the love of power. If knowledge is power, the possession of knowledge gives the joy of power. The love of power stimulates Science, first, by the consciousness that what is known can be wielded as an instrument of great and accumulating results, as in the arts which help the hand, the inventions which store up physical energy in enormous reserves, or spend it with cautious and delicate touch. Another species of power is that which the poet, the

orator, and the man of forecast, may use for honor and blessing, or for infamy and cursing, to themselves and to others. Science also gratifies the feeling of victory and achievement, such as rewards the mathematician, the inventor, and the experimenter, when either has labored long at his problem, and triumphed at last. It provides for the special satisfaction of seeming to create a portion or the whole of the universe by the reconstructions of a theory, — a satisfaction which may be degraded to the silly conceit that the heavens declare the glory only of Copernicus, or Galileo, or Newton, or which rises to the elevated homage of Kepler and Agassiz. O God! I think Thy thoughts after Thee.

Another sentiment which stimulates to science is the desire to impart its gains. This desire blends with the impulses of power, of sympathy, and benevolence. All that we need to know of it, or to notice here, is that it is a real and potent sentiment, and gives efficient help to the desire to acquire knowledge.

Other forces might be named which awaken, and impel to scientific activity; but, whatever they are, they all fall under the category of sentiment. Whether these sentiments do not involve convictions and truths which Science is bound to respect and assent to, we do not ask at this place. Conceding that they are simply emotions, Science cannot separate itself from any of its driving forces. It is neither becoming nor graceful for it to slight or dishonor the springs which awaken and impel its own energies.

2. As Sentiment furnishes the moving forces to Science, it more or less distinctly shapes its ends. These ends may not be always explicitly recognized, but they are none the less real. They may seem to be overlooked by the one-sided devotee of Science, and yet be unconsciously proposed as the aims by which he justi-

fies to himself his scientific zeal, and seeks to set aside the objections, and win the confidence, of his fellow-men.

Political economy would subject all special and private sentimentalities — to what? Surely to the public welfare and what is thought a great blessing, for which the sympathy of man for man is the sufficient reason. This science sternly represses individual sympathies, reproves private charity, and would shape and regulate our benevolent doings by its dry and hard precepts and its formal and heartless routine. It sets up great phalansteries in the place of uncomfortable homes for the poor and afflicted. It places a hard and rough hand upon the impulses of pity. But it is always in the name of the public welfare, and this is nothing more nor less than the well being or the sources of well being to the myriads of individuals who make up the Commonwealth. Wherever this science restrains and guides our private charity, it gives as its reason that we shall make more hearts glad, and more homes happy.

When the parent or teacher denies a petition for indulgence or help, it is that the child or pupil may enjoy the higher satisfaction of independent activity, and win the well-earned rewards of labor, economy, and self-control.

When political wisdom would guard the rights of capital, it is that the laborer may be impelled to accumulate capital for himself, or at least may be assured constant and uniform wages.

When the appeal is from Sentiment to Science upon the question of female suffrage, it is always in the name of that refinement and grace which human nature is supposed to delight in.

When organized and progressive civilization absorbs

the lesser nationalities, and enforces its behests with cannon and cavalry, it is at least in the name of humanity that it enforces the decrees that overwhelm the adherents of every lost cause.

What, indeed, do humanity and progress signify — those charmed words or cant words for which Science bids us do and suffer so much — but richer and more enlarged capacities for human enjoyment?

We do not contend that Science always distinctly recognizes these ends, still less that it proposes the wisest means to attain them, but that, in the last analysis, every end which is proposed by any of the applied sciences is defined in the terms of Sentiment.

In pure science even, in which no practical results are aimed at or achieved, the sense of power and skill, of culture and refinement, of generous sympathy and subtle interpretation, of creative energy and sagacious foresight, are its own exceeding great rewards. These are justly esteemed sufficient to compensate for laborious days and wakeful nights, for the scanty support and the contented obscurity which have fallen to the lot of the sages whom the world *may* honor while they live, but *will* honor when they die.

Even those more aspiring speculations which scientifically eliminate from the universe a God whom we can know, and an immortality which we may enjoy, seem to find a loftier triumph and a more exulting manhood in the fearlessness with which they face these formidable problems and the fancied ease with which they unravel them.

3. Though the sentiments are the motives and end of all our activities, even those of Science itself, they need to be judged and regulated by Science. We mean so far as they are feelings, for it is under this aspect that we view them at present. We leave as yet unde-

cided whether they are not largely intellectual. The feelings, we concede, are simply impulsive and blind. The intellect only has eyes to discern and direct: hence the intellect asserts a natural, and, if you please, a divine, right to guide and control Sentiment. Feeling unrestrained by the intellect becomes passion: when partially controlled, and finding in itself its only law and reason, it becomes *sentimentalism*, which plays the mischief with private and public economics, and gives its sanction to all manner of partial and one-sided theories, which it urges with unreasoning fervor and declamatory harangues. But feeling directed by knowledge and judgment is practical wisdom, common sense, sagacious insight, scientific genius.

That the feelings need a judge and guide is too obvious to require an argument. The feelings are many: they cannot all be gratified. We cannot have our cake, and eat it, at the same time; and yet we strongly desire to do both. Two incompatible desires cannot be indulged at the same moment, by the same man, in respect to the same object. If the two are strong and active, and come together, they work like an acid and an alkali. Who shall decide between them? Surely not a feeling! That would be to bring in another force, as blind and as self-asserting as either of the two, — a third party, instead of a judge, who perhaps might divide the oyster by appropriating the meat to himself, and giving the shells to the two. Surely it is the intellect alone that can decide between two impulsive desires. If it decides on grounds of external consequences, and by the relations of interest and utility, of private loss and gain, the shrewd and controlling intellect is prudence and forecast; if by the quality of the sentiments, and their place as higher and lower in the individual and social economy, and their fitness to be

dominant and law-giving, the judging and ruling intellect becomes the conscience. If it rises higher still, and interprets the personal and ethical agencies of the spiritual universe, through their place and significance in the material, the intellect is transfigured as faith.

But, in thus directing and ruling the feelings, the intellect neither disavows nor dishonors them. It is neither an usurper nor an assailant of sentiment and feeling as such. When it denies one feeling, it gives leave and play to another. It represses one desire by making another supreme. It detaches one impulse that it may attract another. In all this it neither denies the supremacy, nor disputes the authority, of Sentiment as such. Science guides, but Sentiment moves every thing, — in the realm of spirit at least. Whether this may not be true of the universe of matter, we do not as yet decide.

These considerations prepare us to take a step forward in our argument, and to add —

4. Science should often recognize in Sentiment an important element and *datum* of proof. If Science is called into existence by sentiment, and sentiment furnishes and shapes the ends of science, and sentiment is controlled by science, then science may reasonably recognize sentiment as having an important place in the economy of Nature.

For example, in all those sciences which have to do with human interests, as in all the subdivisions of political and social philosophy, it may be assumed as a sound maxim, that any fundamental doctrine which can be clearly proved to be inconsistent with the elevation and enjoyment of the greatest number of human beings is to be regarded as untrue. In other words, those teachings of political economy which can be shown to be the most humane give *primâ facie* evidence that

they are solid and sound. Those systems that favor individual ownership of property, a measure of co-partnership in capital, and co-operation in labor, general education, the alleviation of drudgery, reasonable amusements, the refinement of the public tastes, bring a strong recommendation in their favor, on strictly scientific grounds. These grounds rest upon the axiom that all the arrangements of Nature contemplate the gratification of the better and nobler sentiments of individual men. All social and political organizations find the reason of their being in this as an assumed and attainable end. Nature would be a monster, did she not arrange for the common good ; and Nature would be a bungler, if she did not provide that whatever makes one man happier and better should be consistent with the well-being of all the rest. This principle, we should notice, by no means decides the part which the public or social administration should take in promoting individual welfare. It neither sanctions nor looks toward the conclusion that property should be common, that lawless love should be sanctioned, that the State should own or run railways or insurance companies, or make all grades of education as free as water, that society should flood the community with whatever calls itself money, or seek to ease the money-market every time that it is tight, or furnish employment when there is no natural call for this or that species of labor ; but it does authorize us to believe that any political system, any laws of trade, any methods of administration, which cannot be shown in the long-run to be compatible with the well-being of a virtuous community, may be presumed to be scientifically unsound.

If this is true of institutions and social economy, it must also be true of a theory of life. Whatever theory shocks the modesty or the moderation of nature does

violence to that fellow-feeling which makes the whole world kin, gives spur or rein to the appetites which we have in common with the brutes: whatever tends to degrade or debase our manhood, whatever ministers to bad neighborhood between individuals or communities, or inflames envious or selfish passion, is, for these reasons, rightly held to be false on purely scientific grounds. It is the dictate of a rigidly scientific spirit to reject such a theory altogether until it forces conviction by absolute demonstration.

In such cases, it is not the claim of Sentiment as such, still less of Sentiment as pure feeling, which decides the question, but of Sentiment as recognized and interpreted by Science. The appeal is not taken from the intellect to the feelings, which would open the flood-gates to fanaticism and passion; nor is it from one feeling to another, which would call on the blind to lead the blind; nor does it transfer one subject matter to the court of the intellect, and another to the court of the feelings, which would introduce endless questions about jurisdiction, and make the courts a very laughing-stock by injunctions and counter-injunctions: but it is an appeal to the intellect, in robes of Science too, to ground its judgments upon the *data* furnished by the presence and demands of Sentiment in the nature of man.

Science finds in man the desire for immortality, and finds it to be a persistent and irrepressible force. This desire craves existence for those whom we love, as truly as for our individual selves. This desire is a constant and an ever-recurring fact, a phenomenon of enormous significance, a force of terrific energy, if we estimate it by its power of work. It may not be legitimate to reason we are unwilling to cease to exist, therefore we shall not cease to exist; but it is perfectly right to conclude

that Nature must put a lie on all her analogies and indications, if she has not provided a fact which shall answer to this desire, when viewed in its place among the springs of human action.

When we reason as physiologists only, about the nature of life, or the possibility of surviving death, we must limit ourselves to those indications which are purely physiological. Physiology, as such, knows nothing of what is called sentiment for or against either the origination or the extinction of life. It is at liberty to prove, and it is its duty to prove, if it can, that a living being can be originated or developed into sentient and conscious existence from matter that is not itself alive. But when a scientist fails to do this, and stoutly contends that all the reported instances of such origination are untrustworthy, is it fair or scientific, as Mr. Huxley does, to throw into the balance on the one side the possibility or probability of what the next sixty years may show, and not to throw in upon the other the improbability that is suggested by the violence done to every desire and hope of man's inner being? If a man is scientific in proportion as he is sensitive to the most subtle intimations and analogies within a limited field of observation and experiment, he is as truly scientific when he is equally sensitive to the indications that fly into his face in another field. That Science ought to recognize the sentiments of the soul among the phenomena of nature, will not be denied, however often the duty of doing so is practically overlooked.

The feeling of reverence or worship for the more than finite is another phenomenon, which, Science has at last conceded, deserves its notice. It fails to do justice to it, however, this emotion, if it does not find its counterpart in that living God for whom the heart thinks and longs. We believe that faith in an intelli-

gent Creator is essential to the possibility of Science as the interpreter of the thought of the universe. Our present line of argument would involve the conclusion, that, to meet the demands of the heart of man, Science requires a personal and sympathizing Father in heaven.

Thus far in our argument, we have treated the so-called sentiments as though they were emotions only, having no positively intellectual element, and as only indirectly having claims to the notice of Science. We have argued, that, even when so regarded, they are important as *data* for scientific reference, and have, so to speak, authority over the conclusions of the intellect. We proceed to exhibit them in another aspect.

5. Much of what passes for sentiment has a positively intellectual element. Many of the so-called sentiments signify strong convictions warmed into ardent enthusiasm, and held with passionate earnestness. The intellectual element in them may not be obtrusive. The truths on which these convictions rest may be seen so clearly, and reasoned so readily, that the presence and activity of the intellect can scarcely be observed. The feelings may flash so quickly into flame, and glow with such intense earnestness, that even the subject of them scarcely knows that he thinks at all. It should never be forgotten that emotion in man rests on belief; that feeling of every sort is the legitimate product of what is taken to be true. The proverb which reads, *Wherever there is smoke, there is fire*, may be expanded thus, "Wherever there is fire, there is fuel;" and this may be still further applied, "Wherever there is the fire of emotion, there is a firm belief of truth."

Now, we do not argue that excited feeling proves certain truth. Nothing would be more absurd. But we reason thus, wherever, from one generation to

another, under all circumstances, there have been persistent habits of feeling, which have taken the strongest hold of man's nature, and moved it to its depths, animating it to labor and sacrifice, there is certain evidence that some fact or truth is earnestly believed. This belief may be often sadly and seriously mistaken, it may be but the caricature or travesty of the truth; and yet that there is truth about which it is concerned, which man rightly thinks to be important, is most reasonable to be inferred. That truth, whatever it may be or whatever it may concern, Science is bound to search after till it can find and defend it.

Science, then, is bound to respect Sentiment as an evidence of earnest belief, and, finding earnest belief, to inquire how far it is well founded, and, if it be gross or manifest error, to determine what the truth is on which the error rests. To treat Sentiment as though it were only feeling, and to set Science up against emotion, is to fight a useless battle of words, in which Science denies or overlooks a most important fact. To recognize the rights of Sentiment as feeling, and to refuse its rights as founded on beliefs which indicate important truth, is to dishonor and degrade it.

These convictions, which are so ready to be kindled into a flame of sentiment, are by no means limited to ethical or religious truth. They concern man's earthly destiny as truly as his spiritual nature, his capacity for progress, the triumphs of Science itself, and the harmonies between man and nature and God which betoken the triumph of good. Some of them are the axioms of belief and action, without which the prophecies and promises of Science would be a romantic dream, to deny or even question which would be counted intellectual folly by the most rigid experimentalist, the most positive dogmatist, and the most dogged materialist.

This leads me to observe : —

6. Science, so far as it dishonors Sentiment, exposes its own narrowness, and brings into question its own right to exist, and to give law to man. That philosopher who reasons that Sentiment has no rights over the scientific intellect, because its phenomena and their effects can neither be observed by the senses, pictured by the imagination, or verified by experiment, may consistently dismiss Sentiment in all its forms of faith and duty, as having no possible relations, that he can define, to what he accepts as scientific truth. It would be well, however, that he should ask himself, whether, by his own principles, he does not bring into question the authority of some of those intellectual processes through which all the results of Science have been achieved, and by faith in which all the devotees of Science must stand. The sagacious guess, the creative hypothesis, the splendid and almost inspired prophecy, the magnificent generalization, such as have made modern Science so glorious, and crowned its heroes as re-creating kings of the material universe, are processes, none of which are capable of being observed by the senses, pictured by the imagination, or verified by experiment ; and yet, as we trust them, or dishonor them, so must Science stand or fall. The scientist who would bring dishonor upon Sentiment, whether on its emotional or its intellectual side, or, seeking to honor it, gives to it only the mock homage of his intellectual distrust, ought to subject the intuitions and processes of his scientific intellect to a similar indignity. But, then, what would become of Science, even the sciences of observation and experiment? So soon as you bring dishonor or distrust upon those intellectual faiths which some call sentiments, Science itself must fail.

The case is even worse when the theory of evolution

is invoked to explain the higher convictions and feelings, especially those which pertain to God and immortality. The writer makes no war upon evolution as a law of matter or spirit, so far as it can make good its cause by verified experiments, or even by plausible analogies. But when it is argued that the higher sentiments and truths must necessarily change from one generation to another under this law, so that they can neither grasp nor indicate any truth with which Science can hold any fixed relations, it follows that the foundations of scientific faith must, under the workings of the same law, be exposed to similar distrust. The axioms of mathematics, the belief in time and space, the confidence in the order of the universe and in the achievements of Science itself, nay, the recently evolved belief in evolution itself, are all but the temporary results of the joint action of many somethings with their environment for countless ages. But, if these may give way, who shall guarantee the stability of Science itself? Why may it not happen, that, at the next turn of the wheel, evolution itself shall be evolved into a new formula, and be forever displaced? Science in these days wields a sharp scythe, and performs many splendid and daring feats. It were a pity, that in its zeal to open for itself a smooth path, clear of all impertinent intruders, it should chance to cut off its legs.

But we may not linger on this treacherous ground. Let us return from this metaphysical quagmire, which so many dread as shaking and uncertain, and gain a firm footing, so that we may compress the results of our argument into a few brief definitions.

Sentimentalism has been already defined as feeling, partially enlightened by the intellect, and yet refusing to be controlled by it. That sentimentalism is often simple passion or self-will is obvious enough to any one

who bestows even a casual notice on the mild and malignant fanaticisms which are so abundant in politics, social reform, morality, and religion ; which, on the one hand, shine as splendidly and as harmlessly as the summer lightning, or, on the other, rend and shatter like the crashing thunderbolt.

Sentimentalism is often misnamed Sentiment in popular discourse. We have so used it, that we might illustrate the better the absurdities and contradictions to which the confusion of the two must inevitably lead, and explain and vindicate the higher and better signification. In this better sense, Sentiment involves the action of the intellect, whether it interprets the meaning and scope of an emotion, or kindles emotion into flame by its rapid and sure insight into truth. The proportion of these two elements may vary indefinitely. The presence of feeling as an effect or an element of insight is always present to give warmth and glow to conviction. Sentiment may be as serene as a summer morning, or as stormy as a midnight tempest. It may seem to reason ; but its reasons spring from, or extend to, the heart. But they need be none the less solid or convincing for this, but rather the firmer and deeper, because they take stronger and deeper hold on the nobler part of man.

It follows, also, that Science is not rightly conceived when it is limited to that knowledge which can be formulated by mathematical relations, or verified by experiment. It would be easy to show that even the impulse to believe in experiment, and to test by mathematics, is suggested and gratified by what some would call a "sentiment." The intuitions and faiths on which Science rests are uniformly held and assented to with positive and earnest emotion. Science, moreover, is rooted in common sense, and ought never to separate itself from intimate relations with common life. For

the ends of pure science even, the man who investigates is often of greater significance than the school of science which teaches him how to investigate. The motives which impel him, the aims for which he inquires, his estimates of the purpose for which he himself and the universe exist, go far to determine the quality of his studies and the value of their results.

Science is no foe to common sense on the one hand, nor to faith on the other. It cannot be hostile to common sense; for, when its methods are closely studied, they are found to be nothing more than an exact and disciplined application of the methods of common sense to a special class of objects. The rules of inference, and methods of induction, are as truly applied in the occasions of every-day life by the humblest of men as by the most consummate scientist. But common sense recognizes very largely the needs and demands of the heart of man. It is uniformly vivified and guided by emotion. Similarly, and under a more careful discipline, may Science be taught and guided by those strong convictions, which, when unquestioned, glow with a gentle and unconscious warmth, but, when arrested and challenged, kindle into a sudden and scorching heat.

Faith, again, is warm-hearted sentiment sustained by rational insight, or rapid but self-evident inductions in respect to the facts and truths which concern that unseen and spiritual sphere of which the seen and the material are the reflex and symbol.

A lofty mountain is before us. Its hidden foundations we cannot explore. Its inaccessible summit is enveloped in clouds which are now and then for a moment withdrawn, that they may display the sunlight which ordinarily they only suggest rather than reveal. What we know of the mountain symbolizes what we

know of the universe, finite and infinite, and the methods by which we know. The portion within our reach we map and measure, and carefully delineate. The foundations beneath we cannot wholly uncover. The summit we can never reach. We confidently interpret the inaccessible by the suggestions indicated in the portions which we measure and scale. For the rest, we cannot believe that what we shall hereafter discover will belie what we already know, and meanwhile are content to admire the beauty, and to be elevated by the grandeur, which we feel rather than know. When we essay to construct into an harmonious whole the unseen foundations, the accessible slopes, and the unapproachable summit, we are not disturbed that we know and judge of each by a process peculiar to itself. In like manner we accept common sense, with its intuitions that command conviction, and defy analysis; formal science, with its verified phenomena and demonstrated reasonings; and faith, with its moving and elevating analogies — all as legitimate activities of the one human soul, and giving that consistent though incomplete knowledge of the universe which satisfies both the intellect and the heart.

II.

*THE SCIENCES OF NATURE VERSUS THE
SCIENCE OF MAN.*

A PLEA FOR THE SCIENCE OF MAN.¹

"I walked on, musing with myself
 whether, after all,
A larger metaphysics might not help
Our physics."

MRS. E. B. BROWNING.

NOT many days ago, as I strayed into the study of an eminent physicist, I observed hanging against the wall, framed like a choice engraving, several dingy, ribbon-like strips of I knew not what, arranged in parallel rows. My curiosity was at once aroused. What were they? and why were they so carefully protected and so greatly honored by my realistic friend? They might be shreds of mummy-wraps, or bits of friable bark-cloth from the Pacific, and therefore needing to be guarded under glass; or perhaps, indeed, they were remnants from a grandmother's wedding-dress; or shoe-ties, out of which all color had faded, leaving a faint shimmer of satin finish on the water-stained surface. They were none of these; to have suggested any of which might have been resented by the grave philosopher, who solidly explained that they were carefully prepared photographs of portions of the solar spectrum.

I stood and mused, absorbed in the varying yet significant intensities of light and shade, bordered by mystic

¹ Delivered originally as an address before the societies of the Ф В К at Harvard and Trinity Colleges in June and July, 1871.

letters and symbolic numbers. As I mused, the pale legend began to glow with life. Every line became luminous with meaning. Every shadow was suffused with light shining from behind, suggesting some mighty achievement of knowledge,—of knowledge growing more daring in proportion to the remoteness of the object known,—of knowledge becoming more positive in its answers as the questions which were asked seemed unanswerable. No Runic legend, no Babylonish arrow-head, no Egyptian hieroglyph, no Moabite stone, could present a history like this, could suggest thoughts of such weighty import, or so stimulate and exalt the imagination.

Over against these symbolic bands — records of light by means of the light, and glowing with light to the soul — hung the portrait of Newton, with its wondrous forehead and eagle glance. I turned from the spectrum to the portrait, and from the portrait to the spectrum, still musing as I turned. Newton's daring suggestion,¹ that the force familiarly recognized on the earth might prevail as far as the moon, and possibly extend to the sun, — coming like inspiration, but held in abeyance for years, till careful and long-delayed measurements made it spring into an acknowledged fact,—this came to mind as it had never done before; with it the successive experiments of Newton upon the light, — his expansion of the colorless beam into the gay and many-colored

¹ “As he sat alone in a garden [1666] he fell into a speculation on the power of gravity; that as this power is not found sensibly diminished at the remotest distance from the centre of the earth to which we can rise, neither at the tops of the loftiest buildings, nor even on the summits of the highest mountains, it appeared to him reasonable to conclude that this power must extend much farther than was usually thought. Why not as high as the moon? said he to himself; and, if so, her motion must be influenced by it: perhaps she is retained in her orbit thereby.” — WHEWELL: *History of the Inductive Sciences*, vol. 1, bk. vii. chap. ii. § 3.

spectrum, suggesting theories of rays and undulations and mystic powers in the several colors. There followed the thought of Wollaston and Young and of Fraunhofer, and his discovery of the lines that were afterwards to be interpreted as a mystic language from the far-off worlds. But, first, chemistry must come into being, to evolve the gases, and decompose the solids, that it might use the refracted light to determine the elements of whatever is consumed in the light-giving flame. Each one of these steps of progress involved bold invention and exact observation. But each was necessary to this latest, proudest achievement of our times, by which the scientist has connected the sun and the earth by the closest affinities, and learned not only to interpret the structure of the orb which for centuries had smitten with blindness the eye that had ventured to gaze familiarly upon its face, but even to resolve the *nebulæ* themselves into luminous gases.

I exclaimed in thought, "Would that Newton were now living, and could look with our open vision upon the blinding sun, the glowing stars, and the burning *nebulæ*!—those objects which Science first made so remote, and now brings so near, between which and the eye she first interposed such abysses of distance as appall the imagination, and at last made them so familiar and so near, that we now inspect the sodium or the hydrogen that burns in the lamp upon our table, with the same look with which we watch the sodium and the hydrogen that have been consuming for ages in the sun or the stars. Of all the kings and prophets of science, surely Newton would most have desired to see the things which we see, and to hear the things which we hear. Would, indeed, that he could live again, and witness the completion of the work which he so nobly began!"

I awake from my musing; and, abjuring any scepticism which I may have cherished, I confess my faith in modern science. Though hard-hearted as any metaphysician ought to be, I prostrate myself before her shrine; nay, so ardent is my neophytic zeal, that I am tempted to glorify the photographic spectrum into a fetich. Indeed, had I nothing else to reverence, I could easily worship this.

I return to my studies a wiser, perhaps a sadder, man. To refresh and assure my bewildered spirit, I think of Socrates. Turning to the "*Memorabilia*" of Xenophon, I find I was not mistaken in my memory; for it is there set down to the credit of the philosopher, that "he never discoursed concerning the nature of all things,—how that which the sophists call the universe, *ὁ κόσμος*, is constituted, under what laws the heavenly bodies exist, etc., but invariably represented those who concerned themselves with inquiries of this sort as playing the fool. First of all, he inquired whether such persons thought they had so far mastered the facts which relate to man, as to be justified in proceeding to such investigations, or whether they considered it in order to leave human inquiries for physical researches."¹ Thus records Xenophon concerning Socrates. Poor deluded son of Sophroniscus! For such sentiments, the present times would be more against thee than were thine own, hard as they were. Even the defence of atheism would not have saved thee against so enormous a heresy respecting the sciences of nature. Had a society of modern scientists sat in judgment upon thee, they for once would have been unanimous, and voted thee worthy of death. Certainly thou wouldst have found a smaller minority than thou hadst in ancient Athens, in any modern scientific association, whether it

¹ Xenophon, *Memorabilia*, lib. i. cap. i. 11-16.

were a society for mutual admiration or for reciprocal altercation. For is it not now an exploded idea that man, or what concerns him, is better worth regarding than what was called nature by the sophists in the time of Socrates? Is not man himself now in danger of being eliminated out of the Kosmos? And as to holding that man has any great significance in the universe, has not the doctrine become fixed, that Science has to do only with phenomena, i.e., with material phenomena and their relations? Has not man been satisfactorily resolved into nerve-substance and vibrating force, and thus brought under the laws of mechanism? And has it not come to unconscious speech, without even the suggestion of unconscious irony, that this is the only way in which man can be scientifically studied, even though by this process he is scientifically and summarily disposed of? Is it not now near being demonstrated that man, as body and spirit, as conscience and speech, has been evolved from lower forms of being, with all his furnishings of aspirations, categories, and principles? and is it not also a matter of grave question, whether he can long remain in his present transition state, — whether, having been evolved from some very indeterminate germ, he may not be sublimated into something altogether attenuated and impalpable? In short, is not man ranked very low in the present estimates of comparative science, and is he not in danger of being very soon left out of them altogether?

Somewhat after this fashion ran our meditations respecting nature and man, according to which the two are brought into sharp antagonism as objects of certain and trustworthy knowledge, and as claiming attention from the modern philosopher and educator. Already, in the departments of study and of education, an active controversy has sprung up which threatens

to bring on a sharp litigation, in which the parties are to be the Sciences of Nature and the Science of Man. At present, the odds are largely against man, and we fear that soon it may be claimed that man has no rights which the student of nature is bound to respect; in short, that, if Science requires it, man must go to the wall. There is no telling how soon he may be summoned to allow himself quietly to be shoved out of being under the operation of natural selection, or to be sublimated into some sort of impalpable incense upon the altar of scientific progress.

Under these unequal odds I bring to this ancient and honorable philosophical society¹ — a society which originated when philosophy had another meaning than is claimed for it at present — a plea for the science of man; not as against the sciences of nature, to whose claims I have already confessed my allegiance, but as essential to these sciences, and as, therefore, incapable of being ever superseded, or set aside, or left behind, in their most splendid achievements. I would even be so audacious as to seek to show, that, in all these, man must be a constant quantity, and that the elements which he furnishes can never be dispensed with; that, as the sciences of nature make progress, these elements will come more and more distinctly into recognition; that, as nature is more profoundly studied, the results of this study will bring man's capacities and endowments more distinctly into view. I would demonstrate that man must be thoroughly understood and nobly confided in, if nature is to be interpreted in its widest relations, and our confidence in the principles and laws which are essential to the science of nature is to be surely established. I offer this plea, not in the interests of strife, but in the interests of peace; not to gain a

¹ Of the ΦΒΚ of Harvard and Trinity.

one-sided victory, but to show that no action can hold between the two parties, because the sciences of nature and of man can never be at variance. I would also show, that as there can be no science of nature which does not recognize the science of man, and as the study of nature cannot be prosecuted to the neglect of man, so the study of man will be always furthered by a generous study of nature; that as, on the broader field of investigation and culture, so on the narrower field of education and discipline, the scientific study of nature and the scientific study of man are mutually dependent and mutually helpful.

We enforce our argument, first of all, by an *analysis of the conception of science*. What science is, is not so easily stated as would seem likely from the freedom with which the term is used, or the readiness, not to say the flippancy, with which its authority is enforced. The most cautious scientist would doubtless concede that *nature* furnishes the materials, and *man* arranges them; more exactly, the observing man *collects* facts, and the reflecting man *explains* facts. We speak freely of the careless glance of the one and the sagacious insight of the other. We talk of the *secrets* which Nature has been carefully hiding for generations, and has been reluctantly forced to yield at the bidding of one who had overheard the charmed words at which the doors of her treasure-house must fly open. If we are sufficiently curious to ask what science is, every answer which we give must carry us back to man as an agent who thinks natural facts into scientific theories, who explains phenomena by laws, and founds systems on principles. This question, it is true, may be curious rather than useful. It were too much to expect that Newton should pause in the tremulous suggestion that first connected the detention of the revolving moon

with the force that brings down the falling stone, in order to ask whence the suggestion was inspired, and how it could be justified ; or that the ardent Davy should have held back from the brave experiment that literally unearthed the bounding potassium, in order to perfect a metaphysical analysis of the processes which discovered, or the reasons which foretold it;¹ or that Kirchhoff should have been diverted from the daring gaze by which he would read the secret of the sun, in order to interpret the thoughts which emboldened him to the effort. But how is it after a discovery has been made, or a great secret of nature has been mastered? Then not only curiosity turns from the result to the process by which it has been achieved, but the anxiety to make sure that the jewel wrested from nature has been lawfully obtained, and may be safely held, impels to the earnest inquiry whether the charm by which we won it was whispered us in our ear by the honest spirit of nature, or by some mischief-loving imp of the mocking fantasy. So it happens long after Newton's discovery has become a commonplace to the schoolboy, and Davy's experiment is repeated every day by the shop-lad, and the revelations of the spectrum analysis have enabled the novice glibly to discourse of the secrets of the sun, that the true and earnest philosopher is impelled carefully to retrace the path which has conducted Science to the dizzy heights on which she stands, and tremblingly inquires, How came I hither? Is the standing-ground firm? Are the objects which I seem

¹ For the details of this discovery and experiment, see *Life of Sir Humphry Davy*, chap. iii. We quote the following: "I have been told by Mr. Edmund Davy, his relative and then assistant . . . that when he [Sir Humphry] saw the minute globules of potassium burst through the crust of potash, and take fire as they entered the atmosphere, he could not contain his joy, he actually bounded about the room in ecstatic delight; and that some little time was required for him to compose himself sufficiently to continue the experiments."

to see the firm and solid land, or only a delusive mirage?

Now, if we ask these questions, we must answer them; and if we answer them, so far as we can see, we must study the nature of man. We cannot justify the processes by which we interpret nature, unless we scrutinize the processes of the human spirit which performs them, and search after the principles and faiths which these processes assume and rest upon. We cannot discover and vindicate the grounds on which our inquiries rest, without finding them embedded in man's being as axioms and principles, which, as the result of further scrutiny, we find that he can neither question nor set aside. In other words, the foundations of the science of nature in the last analysis are discovered in the ineradicable beliefs and convictions of the human spirit; and it is only by the earnest and careful study of this spirit that we can find them, and, having found them, can recognize them as the principles by which we interpret both nature and man.

Were we to proceed farther in the analysis of science, we should add, that science objectively viewed is universally conceived as *related knowledge*. Those who limit it most narrowly, assert that it gives us phenomena connected by relations. But facts or phenomena do not connect themselves. To conceive that they do or can, were to fall into the worst and emptiest trick of personifying an abstraction, against which this class of philosophers are, as they should be, the most earnest in their cautions. They require an agent to do this work, and to do it, not after the caprices of an infant's or an idiot's handling, but by wise and intelligent combinations. Whence do these relations, these mystic bonds of science, proceed? The interpreting mind does, in some sense, find them already in its hands. Whether

they are evolved from its own experience, as the progressive acquisitions of association which cannot be broken, or perhaps hardened in the brain under physiological laws, as Mill, Bain, and Spencer would teach us; whether, like a mystic veil, they are thrown over the otherwise chaotic phenomena of both matter and spirit by the formative energy of man, as Kant confidently suggests; or whether they are at once the conditions of thought to man, because they are the conditions of being in nature and God, as the wit of common sense and the research of the profoundest philosophy declare, — these relations must, in the study of nature, be confidently applied by man as fast and as far as the chaos which bewilders the infant, and overawes the savage, is thought into a kosmos by man's interpreting reason. If the inductive sciences claim allegiance from the common sense of mankind, the inductive method must be justified to its critical, and even to its sceptical analysis. But the inductive method can in no way be thus justified, except as the intellect falls back upon its own underlying faiths concerning God and nature. Briefly, *an inductive science of nature presupposes a science of induction, and a science of induction presupposes a science of man.*

We urge, still further, that the *history of the sciences of nature* illustrates their near relation to the science of man. Before Socrates, the physics were as crude as the metaphysics. Both alike were raw guess-work, founded on hasty resemblances more rudely interpreted and generalized. From such speculations about matter and spirit Socrates wisely withdrew his thoughts, that he might first understand himself as nearer and more intelligible to himself than nature. But, in learning how to study himself, he also learned the secret of knowing other things. If we may trust the brief expo-

sitions of Xenophon and the embellished dialogues of Plato, he learned the rules of cautious observation, wise definition, and comprehensive comparison, and rigidly enforced them as the conditions of all trustworthy knowledge. The Socratic method was first applied by him to man and what concerns man. But the disciples of Socrates, having learned the secret of wise observation, could not but forthwith apply it to nature; and out of this Socratic school came the ambitious cosmogony of Plato, the perfected logic, and the sober, and, in many respects, solid physics of Aristotle, with the beginnings of that geometry which soon was so nearly perfected as not to be disdained by Newton and Laplace, — the geometry which the modern schools that are most jealous of the study of man, rightly and earnestly insist on as the only condition of science, writing over their portals, as Plato did, "*Let no one enter here who cannot geometrize.*"

As we trace the beginnings of modern physics, we find that the true method of interpreting nature was sought for by Bacon and Descartes in the nature of man, by the first impliedly and yet abundantly, by the second confessedly and formally. The present century, so distinguished for the achievements of physics, numbers not a few among the most successful students of nature whose attention has been given to the scrutiny of the methods of Science itself. We name Davy, Herschel, Whewell, Agassiz, Faraday, and Tyndall — all of whom have judged the science of induction to be the most fundamental, the most wide-reaching and fascinating, of sciences. Not a few, like Davy, have combined poetic and metaphysical tastes with a genius for physics. We may say almost universally, that men great in discovery, and profound in philosophic research, have always been forward to recognize that man must

furnish the key to the mysteries of nature; he himself being the greatest mystery of all. There have been many so-called physicists who were content to find or take their formulæ and principles at second-hand, and work them out in problems and experiments, — many who have hastily borrowed or stolen them from some crude and effete metaphysics; but never was there a philosopher of nature who looked for a theory of his science, who did not believe in a science of man.

Our position is still further confirmed by the defects, in this regard, of some of *the recent philosophies* which are now attracting general attention. These philosophies have these feature, in common: they all claim to be constructed in the spirit of the inductive method, and after the analogies of modern physics, and to be justified by actual experiment. But they all can be shown to be seriously defective, for the reason that their science of man is too narrow or erroneous to furnish a solid basis for any science of nature whatever.

We begin with the philosophy which is now in the mouth of every man, the so-called *Positive Philosophy*; and, to be both discriminating and just, we will first notice it in that form in which it was taught by its original expounder. The fundamental doctrines of Comte, and the characteristics of the positive philosophy, are thus summed up by Mill: "We have no knowledge of any thing but phenomena (and our knowledge of phenomena is relative, not absolute). We know not the essence nor the real mode of production of any fact, but only its relations to other facts in the way of succession or of similitude. These relations are constant, that is, always the same in the same

circumstances. The constant resemblances which link phenomena together, and the constant sequences which unite them as antecedent and consequent, are termed their laws. The laws of phenomena are all we know respecting them. Their essential nature and their ultimate causes, either efficient or final, are unknown and inscrutable to us.”¹ Of this positive philosophy, as thus expounded, we observe that it is properly, if not emphatically, metaphysical. Against this charge, Comte would earnestly protest in the words, “Have I not demonstrated, by a broad and decisive induction, that the human mind must have passed through the stages of theology and metaphysics before it could reach the apotheosis of positivism? If this induction is good, I cannot be remanded to the condition which I have already outgrown.” We do not care to question whether this historic induction of Comte is correct, concerning which his own adherents hold diverse opinions; nor do we urge that he has no right, according to his fundamental principles, to make any *historic* induction at all: we simply assert the fact that the positive philosophy is a metaphysical phenomenon. To urge that it cannot be, because it does not occur in the right order of time, is to urge that a patient cannot have scarlet-fever or the measles, because the same patient, according to the theory of these diseases, can have neither a second time. It is, to apply the *à priori* method, to set aside a *positive* phenomenon or fact. That the positive philosophy is metaphysical, in the proper sense of the term, is too obvious to admit of question. Its *problem* is metaphysical. It proposes not only to discover the criteria of the processes which are common to all the special sciences, but it sets these forth as the criteria of every true science. Its *method* is metaphysical in so far as it

¹ J. S. Mill, the Positive Philosophy of Comte, pp. 7 and 8. Am. ed.

passes each of these sciences in review, and re-applies these principles to each for its subsequent reconstruction and correction. Like every other metaphysical system, it concerns itself with *relations*. But constant relations are what, in all systems, exalt observed phenomena to the dignity of science. Other systems recognize more relations, — those of causation or force, mayhap those of design. Comte's metaphysics hold to fewer, — those of sequence and similitude. To use a figure of clothing, while other systems honor, by recognition and use, the habiliments which obvious necessity and universal usage have sanctioned, this sect appear among the *sans culottes* of philosophers, on the principle, that, the fewer clothes we have, the nearer we come to naked truth, and the less occasion we have to look after our clothes, or the less we are tempted to think more of the clothes than of the man.

Mill, indeed, while he concedes (p. 8) that Comte, without knowing it, accepted and sought to solve the problem of metaphysics, contends that he rightly defined and avoided metaphysics in the technical sense of the habit of "conceiving of mental abstractions as real entities, which could exert power, and produce phenomena," etc. That this tendency to hypostasize abstractions into real agencies has prevailed in all ages, we admit; that Comte and Comte's disciples have not escaped its influence, it would be easy to show. No class of reasoners seem to exemplify it more eminently. Every question which you ask them, beyond the charmed circle of the formulæ which the master magician has drawn around them with wand and charm, is answered by the stereotype phrases of sequence and similitude, till it would seem as though these relations had become personified into those living forces on which the universe depends for its existence and ordering.

But all this is by the way : the only charge which we care at present to urge against Comte is, that he does not recognize the presence and the agency of man ; that he attempts to furnish a philosophy of science which leaves entirely out of view the prime element in science, — the nature of knowledge as explained by the nature of men as qualified to know. Man is not recognized by Comte¹ as such a being at all, but only as a mass of nervous substance, incased in a material shell, the functions of which, so far as they are deemed worthy of notice, are simply physiological, with the added capacity to expand or modify the incasing skull. Even the poor compliment is not formally paid to this nervous substance of being able to respond to the relations of sequence and similitude in material phenomena. Much less is it honestly conceded, as Comte's own system would require, that this mass has the additional power to observe the relations of constant sequence and similitude between its own material condition and any one of these acts of response or observation. All this is overlooked, and superficially huddled away into the general statement, that what are called psychological processes are properly included under biological phenomena ; and this by the man who claims for the functions of his own brain the magic power to discover the follies of all the preceding philosophies, and to prevent all error in succeeding ages ! Man, as treated by Comte, is not even cavalierly bowed out from the ivory gate of this palace of magnificent pretensions, but the door is contemptuously and violently thrust in his face ; and then, inasmuch as there can be no science and no philosophy of science in which the presence of man must not somehow be implied, he is smuggled in by the

¹ *The Positive Philosophy of Auguste Comte*, translated by Harriet Martineau, bk. v. chap. vii.

meanest of the servants through the narrowest postern that could easily be devised.

Much may be truly said in praise of Comte and the positive philosophy. The daring of his problem, his exact and manifold knowledge of the special sciences, the breadth of his generalizations (especially in mathematics and physics), the cool severity of his stony-eyed criticism,—all these deserve the highest commendation. But the *naïve* and narrow simplicity, which, in a philosophy of knowledge, leaves out of sight man, or the knowing agent, and the unconscious innocence of his metaphysical abnegation of metaphysics, should claim no man's admiration. The student of nature or of history who is content with a formula to work by, may be satisfied with the positive philosophy; but any one who looks for a well-rounded theory of all human knowledge, and a comprehensive statement of the axioms and the principles which it involves, cannot but be disappointed with Comte's teachings, and reject him as a trustworthy expounder of philosophy.

John Stuart Mill, the follower, yet critic, of Comte, has distinctly recognized some of his defects, and has attempted to supply them. But he has failed in *four* essential particulars. He has neither given a satisfactory theory of the mind nor of matter, nor of the process, nor of the axioms, of induction itself. Though he contends most stoutly for the legitimacy of psychological observation, and the necessity of a correct theory of the soul as fundamental to induction, he provides no such theory: as how could he, if he limits this science, after the dictum of his master, to phenomena and the relations of sequence and similitude? The knowing agent that must not only build up science, but provide its foundation principles, Mill resolves into successive states of consciousness: he even

calls these feelings, which are wrought by we know not what. He defines the agent that believes in the spectroscope, and is not dazed by the sun, "as a series of feelings with a background of possibilities of feeling."¹ We do not stay to inquire what the word "background" can mean, unless it be the knowing *ego* familiar to common sense, and not unnecessary to philosophy, which is smuggled in through the *back-door* of a vaguely metaphorical term; nor whether "possibilities" does not involve, while it seems to hide, the relation of causation or force, against which Mill protests. We only observe, that it is more creditable to the candor of Mill than to his acuteness, that, on second-thought, he completes this definition of the soul by calling it also "a series of feelings which is aware of itself as past and future."² Here, again, we have another example of this subreption by a postern, of the notions of the soul itself, and its relations to time, both of which had formally been discharged by the front passage as superfluous. More amazing still is it, that, after making this correction, he recovers his sense of consistency, or rather, demonstrates his own insensibility to the absurdity of his position, by confessing that "we are reduced to the alternative of believing that the mind, or *ego*, is something different from any series of feelings, or possibilities of them, or of accepting the paradox, that something which, *ex hypothesi*, is but a series of feelings, can be aware of itself as a series."³ Which of these alternatives does he embrace? Does he adhere to the one construction which his formal definitions, as well as the whole drift of his philosophy, require him to support? or does he frankly concede that he believes in the mind as an agent, — an existing being which is something

¹ Examination of Sir William Hamilton's Philosophy, chap. xii.

² Ibidem.

³ Ibid.

more than a series of feelings? He does neither, but proceeds to affirm, "The truth is, that we are here face to face with that final inexplicability at which we inevitably arrive when we reach ultimate facts."¹ But why not accept the facts, and shape one's definitions accordingly, instead of constructing a definition of the soul, and building a theory of induction upon it, which the facts can never sustain. He prefers to concede his failure in the extorted acknowledgment: "I do not profess to account for the belief in mind."² We had not expected such a confession without repentance, and, what is worse, without a sense of the need of repentance, from the modern lawgiver of scientific method; from the new Bacon, who has codified the rules for the inductive study of nature; from the plausible and pertinacious antagonist of what he calls *à priori* metaphysics!

Not only has Mill entirely failed, and by his own confession, to provide a mind which can interpret matter, but he has failed as signally to provide for our belief in matter, or the universe of nature, which man must interpret. Though he claims, by eminence, to be the philosopher of things;³ though he denounces with a slight disdain those who prefer thoughts to things,—he makes no provision for our knowledge of things, or our belief in the material world. His formal definition of matter (while it is vastly more vague and unsatisfactory) is as purely idealistic as that of Berkeley or Collier. Matter he defines as "a permanent possibility of sensations."⁴ He concedes that this definition would satisfy Berkeley, and that, in any other sense than this, he does not believe in matter. He did not seem

¹ Examination of Sir William Hamilton's Philosophy, chap. xii.

² Ibid. 3d Lond. edition. P. S.

³ Logic, bk. i. chap. ii.

⁴ Exam., etc., chap. xi.

at first to be aware, that, through the word "permanent," time has stealthily crept into his definition, and that "possibility" is not too narrow to let in causation, — that dreaded metaphysical entity. He makes a fearful nod, when he says squarely, "The possibilities are conceived as standing to the actual sensations in *the relation of a cause to its effect*." ¹ His assurance culminates when he refers our faith in the permanence of these possibilities to the assumption that sensations similar to our own are experienced from material objects by other beings. "The world of possible sensations succeeding one another, according to laws, is as much in other beings as it is in me: it has, *therefore*, an existence outside of me, it is an external world." ² As if the existence of other beings, with the relations of *outside* and *inside*, were not the things to be accounted for; and as if, through the door opened to admit this item of proof, space and its relations, including matter, had not marched boldly in, after both had been formally excluded, till they could be formally introduced by a philosophical ticket of leave!

But, allowing Mr. Mill to believe in man and nature as much or as little as he will, we inquire, with greater earnestness, what is his theory of induction, i.e., how does he explain the process? and on what foundations does he rest the resulting product? These questions are somewhat important when the scientist requires me to believe in the spectroscope. Especially are they important in the view of the neophyte, whose faith in science is weak, and who considers all at once the number of assumptions which enter into the result, — the truth of gravitation, the theory of light, the chemical analysis by light of burning bodies and gases, and, above all, when he takes into account the enormous distances,

¹ Exam., chap. xi.

² Ibid.

and the subtle indications. It is not wonderful that he asks, "How and why is it that I am justified in accepting this wonderful story, as enchanting, if it be not as fabulous, as the story of the 'Lamp of Aladdin'?" Pray, Mr. Mill, who knowest every word and syllable of the magic spell, repeat it to me letter by letter, and word by word, confirm the steps of my tottering faith, trace out for me the subtle and narrow path along which the philosopher has reached the stars, and even leaped into the abyss beyond.

How does Mr. Mill answer these entreaties? "Induction, my son, in philosophical language, is the result of repeated experiences of sensations so closely combined as to have become practically inseparable. We learn in this way to make the familiar and the near to represent the unfrequent and remote, according to certain axioms and principles concerning the uniformities and laws of nature and the relations of time and space, which give mathematical truths and relations."—"But whence are these ultimate beliefs derived?" To this Mr. Mill has no other reply: "All these are derived from induction. Even the very principles that are used in induction, and the very beliefs that are most sacred concerning the sequences and similitudes of phenomena—these all are the products of induction, even though they are the conditions of induction and all come from inseparable associations."—"Is this all that can be said of them? How, then, can I trust them, supposing I have not yet learned to associate these things together; or what if they should be differently connected in other minds?" To this he would reply, "The last is supposable; and the consequence would be, that those minds would have different beliefs concerning the laws of nature, and even concerning the fixedness of any laws of nature, or the relations of number and

magnitude. It is supposable, that, to the inhabitants of another planet, their inseparable associations should be so strangely mixed and re-adjusted, that they should multiply *three* and *four* into *eleven*, and should conceive that to issue ten per cent dividends signifies to steal the capital ten times over. Or the inhabitants of another might be trained to believe that two straight lines might so enclose a space, that a railway charter from New York to Erie might be mathematically demonstrated to cover all the adjacent territory indefinitely in every direction. But to correct all such abuses, he would add, "You can use experiments, and they will verify all correctly joined associations, and expose those which are false." — "But," urges the novice, "I can make but few experiments, and concerning objects of limited reach; and what I am required to believe is a long way off. I cannot test the assertion that sodium is actually burning in the sun, the indications are so very remote, though very plausible. I can burn the sodium in my lamp, and, as I watch the spectrum, I can refract another spectrum from the sun; but how shall I pass from what is united in the one to what is unknown in the other? Nay, how do I know that what you sometimes call causation, and at other times call sequence, prevails in the sun at all?" This question is so important, and the answer so fundamental to the neophyte's faith, that Mr. Mill would probably refer him to chapter and verse in his "System of Logic," which reads as follows: "In distant parts of the stellar regions, where the phenomena may be entirely unlike those with which we are acquainted, it would be folly to affirm confidently that this general law of causation prevails any more than those special ones which we have found to hold universally on our own planet. The uniformity in the succession of events, otherwise called 'the law

of causation,' must not be received as a law of the universe, but of that portion of it only which is within the range of our means of sure observation, with a reasonable degree of extension to adjacent cases. To extend it farther is to make a supposition without evidence," etc.¹ "But, if all this is so, I may as well give up my faith in the solar spectrum. Sodium burns in the lamp, and its flame can be defined; but to conclude that sodium burns in the sun, because the sun emits a similar light, does not seem reasonable. The cases are far enough from being adjacent, and the circumstances are, in manifold particulars, very unlike." Mill's very slender basis for inductive reasoning would seem to be as suitable to confirm the doubter concerning some new discovery in physics as the writings of Colenso to strengthen faith in the Pentateuch, or of Strauss and Baur to lead to confidence in the gospel history. But the defects in Mill's philosophy of induction are necessary consequences of his defective and uncertain science of man's power to know. The signal failure of one of the most elaborate attempts that has ever been made to furnish a scientific foundation for the science of nature is explained by its defective and uncertain science of man.

The defects of Mill's philosophical writings are the more conspicuous, the more sharply they are contrasted with their manifold excellences. His rules for the practice of induction are comprehensive and sagacious, and they are amply illustrated and applied. His observations upon classification and language are rich contributions to philosophical literature. His acuteness in criticising, and his skill in exposing, the vulnerable points of antagonistic philosophies, as also his admirable candor in confessing the difficulties of his own,

¹ *System of Logic*, bk. iii. chap. xxi. sect. 5.

with his something more than admirable unconsciousness that his confessions amount to a complete surrender of every thing for which he would contend, force his reader at times to exclaim, "*Miranda simplicitas si non sancta!*" Like Comte, he protests that he does not expound metaphysics, but only logic, striving to set up a distinction between the reasons of the logical rules which he professes to expound, and the underlying philosophical axioms, which he styles "transcendental metaphysics." And yet these he is constantly obtruding, and endeavoring to account for; contending that our ideas of time and space, the conceptions and axioms of mathematics, the belief in causation, in induction, and in the uniformity of the laws of nature, are all derived from experience; while experience, with its authority for the distant and the future, is the product of associations that have become so inseparably blended that they cannot be got rid of.

From Mill, we proceed to the *Cerebralists*, to *Alexander Bain* and his school, who limit the science of man to the analysis of the brain and its functions, and claim that the so-called physiological psychology is the only basis for a solid science of the soul. This point we shall not contest: we urge only, that, if the basis is broad enough for a science of man, it is neither broad nor deep enough to support a science of nature. Let it be granted that brain convolutions, and nerve vibrations or nerve growths, may account for the differences and developments of the human soul; that vision is simply a nervous response to the undulating light, and touch is an adjustment of particles in the innervated cuticle in accordance with the molecular agitations in the solids with which it comes in contact. Let it be granted that memory, imagination, classification, and

reasoning, are but material forces newly correlated in the forms of nervous movements, and that what is called self-consciousness is one set of brain fibres dancing a mazy antistrophe to similar fibres in a corresponding brain lobe. Granting that all of man which we call thought, emotion, and aspiration, is reducible to the workings of mechanical statics and dynamics, we fail altogether to explain how man so constituted and so acting can form a science of nature; how Newton came to connect the falling stone with the moon steadily detained and impetuously struggling in its path, and ventured to write down the law of each in a brief algebraic formula; nor how Kirchhoff happened to imagine, and was inspired to believe, that he could see the burning sodium in the molten furnace of the sun, and could follow the hydrogen that flashes in jets along its surface. Let cerebral physiology do what it will in its movements against a better theory of man; let it call in to its aid the portentous battalions of the correlated forces; let unconscious cerebration dart in and out of the conflict with its wily and quick-moving cavalry — one and all fail utterly to demolish the solid squares of convictions on which the intellectual soul must plant itself when it makes good a grand discovery, like those of Newton, or Davy, or Faraday, or Kirchhoff. The eloquent John Tyndall has truly said, more boldly perhaps than he was aware, and forgetful of consistency with many of his teachings, “It is by a kind of inspiration that we rise from the wise and sedulous contemplation of facts to the principles on which they depend.” “This passage from facts to principles is called induction, which, in its highest form, is inspiration.”¹ Whatever else may be true of the brain philosophy, it can never explain and validate induction,

¹ John Tyndall, *Fragments of Science*, p. 60.

with the mystery of its insight into nature's secrets and the mastery of its power over nature's forces.

From Comte and Mill, and the cerebralists, we proceed to *Herbert Spencer*, who claims to be more profound and comprehensive than them all; for whom his adherents claim, that, like Kant, he is the *zermalmende Philosoph*, — the all-crushing of these times; of whom it is asserted, that he takes into his system all that is true in the old metaphysical and the new positive and brain philosophies, and causes every thing to re-appear with a profounder meaning and a more catholic application. We cannot charge against Spencer that he neglects or dishonors the science of man. He stands foremost among modern writers in recognizing psychology as fundamental to all philosophy, whether of matter or spirit. He may be said to accept spiritual phenomena as having existence in their own right, and as claiming authority over other facts, so far as they furnish the principles for every department of philosophy. He recognizes fully the necessity that certain principles should be necessary and axiomatic. So far all is hopeful, and seemingly all that a sound philosophy could desire. But we soon discover that these fair promises are sacrificed to the merciless requirements of a metaphysical hypothesis which is as remorseless in its exactions as it is usurping in its authority. The *law of evolution*, acting as a movement of differentiation and integration, is ushered upon the scene, destined, like Saturn, to devour its own children as fast as they are produced. It is itself not proved. It does not claim to be self-evident, but simply, that, like Mill's induction, it is capable of being verified in every individual instance in which it can be applied. Its terms, also, are so broad as to be capable of a great variety of

significations. "Evolution," "differentiation," and "integration," are words of many-sided import, as Spencer's use of them satisfactorily illustrates. Evolution is now treated as though it were a living force, endowed with the energy, and invested with the wisdom, of a personal creator; and again it sinks to an innocent symbolic formula. Differentiation and integration now rise to the dignity and mystery of organizing forces, and anon they sink into the meaningless platitudes of insignificant logical generalizations. It is not surprising, that with phrases so vague in their import, and so plastic in their application, the mysteries of the universe are often explained by Spencer in the manner of a dexterous juggler, — as plausibly to the eye, and as unsatisfactorily to the mind.

But one thing, at least, Mr. Spencer has not explained, nor does he in any wise provide for; and that is the possibility of a science of nature, and simply because by his theory the principles on which such a science rests are themselves but transient waves thrown up for the moment by an ever-heaving and new-evolving sea. According to Spencer, man as a differentiated and integrated type of being is physiologically evolved from a less complex type of being. Intelligence is a more complex evolution of life, and life is the joint product of interior and exterior relations. Even the axioms of intelligence which Spencer had recognized as the necessary and ultimate laws of thinking — these obey the same law. At first they are sprouting tendencies towards scientific axioms, which are gradually fixed and hardened in the brain, so as to strengthen with the growth, and be transmitted with the progress, of successive generations. The conceptions of time and space, with the relations they involve, follow this rule, being perfected and adjusted by a long course

of physiological evolutions. This is man according to Spencer. Is he competent to attain to a science of nature? Behold him, on some bright morning of the evolving æons, just ushered into being, "like the herald Mercury, new-lighted on some heaven-kissing hill," which he spurns with his impatient foot, as just about to leave the earth for some higher sphere. He looks out upon nature, that he may interpret its laws; he geometrizes among the stars like a god; he weighs the mountains in balances; he takes up the isles as a very little thing; he reads the history of the earth, turning back its rocky laminæ one by one, and interpreting the characters that speak from each. He catches the light, and unfolds it into spectra of beauty, finding in each one of its glowing bars some secret of nature's hidden magic. He studies the composition of matter, its crystalline orderings of method and symmetry, and its chemical affinities and transmutations. He attempts the more difficult problem of life: he pauses in astonishment before the profounder mystery of the soul. Next he essays to account for the origin of these varied forms of being; and, by one daring sweep of generalization, he thinks to comprehend and explain the universe. By the magic of a formula as vague as it is broad, he thinks he discovers that matter and spirit, that thoughts and things, are evolved by a self-moving tendency, after which life is lifted out from death, and intelligence springs forth from life. He is confident that the science of the universe is unravelled by a newly corrected science of man, adjusted to his metaphysical theory. But is it so? Has Spencer succeeded? Let it be granted that so long as man endures as a persistent type of knowing force, with his interior relations, — i.e., his powers, his categories, his time and space, — that so long the science of the universe, which is built up by the application of

them all, may stand, and be trusted as true. But what is to happen at the next evolution of this ascending spiral, when another form of knowing energy is evolved, with its new and more complex furnishings? May not some new interior relations emerge, some powers and modes of thinking, some principles of science itself, which shall reverse the science of to-day, and cause the Principia of Newton, the Logic of Mill, and the First Principles of Spencer himself, to be but an empty babble, because they are all outgrown; the intellect newly evolved finding in them no import, and acknowledging in them no authority?

To this it will be replied, that Mr. Spencer assumes that there can be no new evolution of the power to know, which does not correspond to some new objective relation in that which is known; that, while it is true that the beliefs in time and space are themselves developed, he assumes that there correspond to them certain exterior relations; that, in fact, he even goes farther, and surrounds this finite universe with the incomprehensible somewhat, in whom he allows us to believe, provided we will concede that what we believe does not correspond to the truth, and summons us to worship, provided we will confess that we worship we know not what. He does, indeed, assume all this. But by what authority does he enforce these dogmas, except by the impressions of a being who is himself evolved, and whose power to believe that there are realities which answer to his own interior relations is itself a transient interior relation which has been evolved from the agencies which have chanced to produce it, and whose methods of knowing are themselves the products of an evolving and changing physiological growth? If the man of the present æon, as the philosophy of Spencer explains, is warranted in trusting the axioms of evolu-

tion and the persistence of force, then these axioms are something higher and more authoritative than physiological products, evolved by the coincidence of exterior and interior relations. If Mr. Spencer's "First Principles," or the first principles of any other philosopher, are to be received as the foundations of science, they are good for all time, for all the past and all the future. They have a higher and more permanent authority than his special theory can vouch for. The sciences of nature and spirit which he expounds cannot stand upon any foundations which he provides for their support in his science of man. Every such science is weak just in proportion to the sweep of its pretensions and the accumulation of its facts. It is like an imposing engine which is reared upon a pedestal that is massive to the eye, but which crushes its foundations into sand by the first movements of its ponderous and complicated structure.

The position which Spencer holds among the philosophers of our time is so unique as to justify, if not to require, special attention. Many-sided in his culture, especially on the side of physics, mathematics, and natural history, and apparently familiar with the history of human culture and human progress, he seems to command an inexhaustible fund of pertinent and attractive illustrations. If he is not always clear in announcing his principles, if his arguments do not always convince us of the truth of what we do understand, the wealth and variety of his facts never fail to delight and astonish the confiding reader, who cannot find it in his heart to distrust so well-furnished a writer. The apparent breadth and daring of his generalizations surprise the student who does not consider that philosophical genius is as strikingly displayed in the acute detection of subtle differences as in the vague sugges-

tion of broad and meaningless similarities. The catholic spirit with which he seems to desire to do justice to every system of philosophy and religion prepares for an easy credence in the universal solvent which promises to decompose them all. The positiveness of his manner and the dogmatism of his assertions, which increase with the paradoxical character of his opinions, are elements of power with readers whose credulity rises with the daring of their admired and trusted leader. It would not be fair to say, that, so far as matter is concerned, Spencer writes like a sophist or a charlatan, for the reason that he instructs us in too many single and important truths. But it is not unjust to assert, that, in method and manner, he is master of the art of imposing exposition. The reader who has had some experience in the necessary art of searching for a meaning and method in writers in which neither is obvious, will often lay down Spencer in despair, if not with disgust, for his stealthy subreptions, his cool word-plays, his confounding of inductions with axioms, and his sacrifice of common sense to the requirements of an unproved theory. The clearness of his diction is no compensation for the lack of that earnestness and *verve* which are the never-failing indications of the highest qualities of genius. The coolness of his manner rather betrays than hides the consciousness of paradox. His attempt to reconcile philosophy with religion proves his conceptions of both to be superficial. No well-read student of philosophy can hesitate to believe, that, notwithstanding the zeal of his admirers, he will ere long cease to be the wonder of the hour; that, so soon as the secret of his plausibility is exposed, he will suffer a more complete neglect than he will fairly deserve.¹

¹ The author takes the liberty to call the attention of his reader to the fact, that this is a metaphysical essay or meditation, the argument

These arguments and criticisms must suffice. We do not urge that a profound study of man, or a formal recognition of the principles which underlie the study of nature, are essential to eminent attainments in special sciences, or to enlarged and liberal views of scientific research. The working formulæ of a single science, and, indeed, of many, may be mastered by an adept, and skilfully applied to brilliant achievements, almost without the suspicion that they can be justified by a philosophic method. The principles and methods

of which is directed to a single conclusion, and is in no sense a comprehensive treatise or criticism of any system of philosophy. While he claims no exemption from the obligation to interpret Spencer's doctrines correctly, and to state them honestly, he does not consider himself required to expound his system at length, or to show, that in many of the positions to which he attaches very great importance, and urges with the greatest persistence, he is flagrantly inconsistent with himself; that he not only goes beyond the range of knowledge and belief to which he had limited himself by his theory of evolution, but introduces assumptions for which his system makes no provision. With the most earnest desire to understand Spencer, and some effort to reconcile his doctrines with one another in logical and philosophical coherence, we can find no place in his theory for what he calls *Ultimate Religious Ideas*, for the reality of which he contends so earnestly, as against Hamilton and Mansel, with *naïve* unconsciousness of any inconsistency with his own theory of knowledge,—on which theory, however, he does not hesitate to fall back at once as soon as he seeks to demonstrate their perpetual *unknowableness* by man. Nor is it any easier to see how this theory allows him to distinguish between a *formulated* and an *unformulated consciousness*, after having shut himself up to that consciousness which is formulated; nor how his explanation of the *genesis* of the ideas of *space and time* by evolution can provide at all for his belief of the necessity or universality of these ideas, or of the realities which correspond to them; nor how the philosopher who has limited the researches of science to the relations of co-existence and sequence, and has thereby formally excluded the relation of causation, should abruptly introduce us to something which he denominates *force*, which he oracularly informs us is inscrutable, and concludes therefrom that matter and spirit may therefore be mutually convertible and interchangeable. The reader who chooses to make the experiment for himself, of explaining and reconciling these incoherences of Spencer, is referred to his *First Principles*, part I. chaps. ii. iii. and iv., part II. chap. v., and *The Principles of Psychology*, part IV. chap. vii. § 208.

of induction are practically taught by nature and common sense to every one who is willing to use them. But should any one be questioned or denied, either in obedience to the private maxims of a special philosophy, or the spirit of a narrow and special study of a part of nature called physics, it must be recognized and defended; and, in order that it may be defended and recognized, it must be carefully studied by a thorough examination of man.

For this study, the devotee of any special science may be the more disqualified in proportion to his zeal and success in his own department; but, for this very reason, the greater may be his confidence in pronouncing upon questions of this sort, and with a positiveness which is proportioned to his incompetence. Nothing is more arrogant, and nothing ought to be more offensive, than that the powers and principles on which all science and induction depend should be resolved by or after analogies derived from the mechanics of matter and the dynamics of life. To narrowness of this sort the sciences of nature offer special temptations. The objects are so real, the processes are so definite, the experiments are so satisfying, the enthusiasm is so contagious, that the devotee is tempted occasionally to forget that he is a man as well as a scientist, and to adjust his estimates of human science and culture, and even of man's power to know, by a standard taken from a single and a narrow sphere. He that would converse with Nature with effect, in these times, must retire apart into a separate cave, that is lonely and far withdrawn. Within its recesses alone does Nature whisper her choicest secrets, and after a long and painful initiation of the devotee. To his uplifted torch alone does she reveal the starry roof and the brilliant vision. No wonder, that, when he emerges into the

light of common day, he is as one dazed and bewildered, and talks of common things with strange and perverted speech. A one-sided cultivation, with its positiveness, and not ill-grounded conceit, is not barbarism indeed; but it is not culture in the large and generous sense of the term. A system of education which is bent upon training specialists in any department may be defective in proportion to the completeness with which it absorbs and limits the energies of its devotees. That the study of man is fitted to correct these exclusive tendencies has been demonstrated by the many eminent examples which modern physics has furnished of philosophers distinguished alike for imaginative genius, careful observation, and speculative interest concerning the nature of man and the methods of science. That these tendencies need to be corrected, is as strikingly proved by the number of scientists of another sort, who are not content with a well-earned reputation within their own departments, but set themselves to reform psychology and metaphysics after the law of the dissecting-room, and to correct theology in very extemporized "Lay Sermons."¹

We do not overlook the truth, that the student of man is exposed to a narrowness and dogmatism of his own, and can learn much, if he will, from the sciences of nature. All these sciences are but the products of

¹ The writer has no desire to say hard things of Mr. Huxley, because he has chosen to adopt the title of Lay Sermons for certain of his discourses; but he cannot avoid the impression that he would have done much more wisely, had he pursued a course with respect to metaphysics and theology similar to that which he does not hesitate to recommend to clergymen and metaphysicians with respect to science, — i.e., had he let them alone. The confident utterances in respect to the fundamental problem of philosophy, and the truths and duties of religion, which are freely expressed in many of these discourses, appear to the greatest disadvantage when contrasted with the purely scientific expositions into which they are interwoven. They seem to have many of the worst characteristics of the most offensive descriptions of sensational preaching.

the varied applications of his spiritual power to the investigation of that truth which must be tested by experiment, and enforced as fact. A mistake in the investigation of nature is not only certain to issue in failure in discovery ; but it at once attracts attention to the error of method in the experiment, or of principle in the theory. Nature is fearfully and sternly realistic. She abhors the brilliant vagaries, the imaginative rhapsodies, the cloudy phraseology and dreaming idealism, in which the one-sided student of man and of metaphysics is tempted to indulge. While she suggests an elevating and spiritual philosophy of her own, and hides a magnificent history in her past, as well as veils a more splendid romance in the future, she deals very summarily with the metaphysical cosmologies, the idealistic physics, and realistic logics, which imaginative students have put off as *à priori* philosophies of nature. The student of the mind and of man, who has been schooled by a close and stern wrestling with the forces and laws of matter, cannot but carry the lessons which he has learned into his study of the soul and of the methods of science. He will exact from others, and impose on himself, severe requirements in respect of clear definition, rigorous logic, well-grounded analogies, and coherent arrangement. The best security against the recurrence of that metaphysical romancing by which the science of man and the logic of science have been dishonored in the past is to be found in the methods to which physics are so vigorously held. Under the pressure of these lessons, the metaphysics of the future are likely to prove sober and discreet. If they should need any additional warning from this quarter, they can find them in the examples of extravagant metaphysics which are furnished by the physicists and physiologists who would develop man, and the in-

ductive philosophy itself, from the crucible, a beanstalk, or the gorilla; or by the metaphysicians who solve all the problems of the universe by a formula of sequences and similitudes, and a law of evolution, — forever attempting, and forever failing, to discover and reveal the mystery that lies hidden in *the unknowable and the unknown*.

The study of man is not necessarily the study of psychology or speculative philosophy. Man is made manifest in history, philology, literature, art, politics, ethics, and theology. The thoughts of man have recognized and accepted those principles and institutions, those manners and laws, that civilization and culture, which give security and grace to the present life, while they awaken the anticipations, and confirm the faiths, which reach into another. The study of all these is a study of *the humanities*. It enables us to understand man, and to benefit man, not only as he interprets and controls what we call nature, but as he interprets and controls that which is highest in nature; i.e., man himself.

This suggests the thought, that the sciences of nature are not only related to the science of man because man interprets nature, but because man is a part of nature; and nature cannot be truly and liberally interpreted, unless man, in his higher capacities, is embraced within her plan, and made the end of her agencies. That is a very narrow view of nature which only finds in nature physical agencies, and limits her resources to mechanics and chemistry, but discovers no place in her broad expanses or her generous provinces for spirit or intelligence, accepting no man, but protoplasm. That is also a narrow view which recognizes man's higher endowments and destiny, but allows them a scanty place and meaning in the scientific interpretation of the physical

arrangements of the universe. The science of man, and of man's higher nature in its highest developments, is essential to a science of nature, because nature itself cannot be interpreted, except as designed for the uses and culture and development of man as a spiritual being. Thus to interpret nature does indeed require that we assume design in nature. But all philosophy must assume this, so far as it interprets the past or forecasts the future. The positive philosophy does this, when it assumes that "the relations of sequence and similitude" are constant; that is, are always the same in the same circumstances. Darwin and Spencer both assume that there is a plan of successive development or evolution provided for in the infinite capacities of the undeveloped germs (if such began at all), or in their still more enlarged capabilities of successive evolution and disintegration, if the march of evolution is in cycles returning upon one another. It would seem that the wise intelligence assumed for this law of evolution would draw so heavily upon the faith of its defenders, as to leave them little courage to sneer at any theory of creation as "the carpenter theory." But, upon questions of consistency or taste, we have no room to enlarge. We contend, at present, only for the position that we cannot have a science of nature which does not regard the spirit of man as a part of nature.

But is this all? Do man and nature exhaust the possibilities of being? We cannot answer this question here. But we find suggestions from the spectrum and the spectroscope which may be worth our heeding. The materials with which we have to do in these most brilliant scientific theories seem at first to overwhelm us with their vastness and complexity. The bulks are so enormous, the forces are so mighty, the laws are so

wide-sweeping and at times so pitiless, the distances are so overmastering, even the uses and beauties are so bewildering, that we bow in mute and almost abject subjection to the incomprehensible All, of which we hesitate to affirm aught, except what has been manifest to our observant senses, and connected by our inseparable associations. We forget what our overmastering thought has done in subjecting this universe to its interpretations. Its vast distances have been annihilated; for we have connected the distant with the near by the one pervading force which Newton divined. We have analyzed the flame that burns in our lamp and the flame that burns in the sun, and done this by the same instrument, connecting by a common affinity, at the same instant and under the same eye, two agents the farthest removed in place, and the most subtle in essence. As we have overcome distances, so we have conquered time, reading the story of antecedent cycles with a confidence equal to that with which we forecast the future ages. The philosopher who penetrates the distant portions of the universe by the *omnipresence* of his scientific generalizations, who reads the secret of the sun by the glance of his penetrating eye, has little occasion to deny that all its forces may be mastered by a single all-knowing and *omnipresent* Spirit, and that its secrets can be read by one all-seeing Eye. The scientist who evolves the past in his confident thought, under a few grand titles of generalized forces and relations, and who develops, and almost gives law to, the future, by his faith in the persistence of force, has little reason to question the existence of an intellect capable of deeper insight and larger foresight than his own, which can grasp all the past and the future by an all-comprehending intelligence, and can control all events by a personal energy, which

may, perhaps, be softened to personal tenderness and love.

We blame not the scientific discoverer, when, fresh from some triumphant experiment, he rejoices in the consciousness of power. We wonder not that he rises from his feat of discovery with a sense of mastery and dominion. Man by thought *is* THE KING of the universe, so far as by thought he masters its secrets, and lays his hand upon its forces. Let him be crowned as king by Science, and let no one dispute his right to rule. But let him never forget that it is only by the right which spirit asserts over matter, which thought assumes over things, that he has gained this dominion, and that he can extend it only as he learns more wisely how to know and use his own sagacious, self-relying mind.

But has nature no other king? To answer this question here lies not within our scope. The suggestions which we have made would, however, seem to justify the conclusion that the sciences of nature, when viewed in their fundamental philosophy, do not necessarily lead to atheism. The history of these sciences of nature, moreover, testifies, that while the dexterous workers in experiments may successfully apply the formulæ which the thinkers have furnished, and be content to look no farther, the architects and philosophers of nature have uniformly and necessarily recognized the only possible foundations of a philosophy of nature in the spirit of man, as capable of thinking the thoughts of God. The nature of science as justified to the mind of man, also reveals the truth that its methods and assumptions are but varied acknowledgments of an originating Intelligence whose thoughts and purposes we interpret just so far as we discover the forces, determine the laws, or explain the history, of

the universe. So far as man as a thinking being thinks the facts of nature into science, so far does he complete the cycle by recognizing the discoveries which he makes and verifies as the living thoughts of the living God.

III.

WHAT WE MEAN BY CHRISTIAN PHILOSOPHY.¹

I AM aware, as many of you must be, that the phrase Christian Philosophy is rejected by many well-meaning and truth-loving men as unmeaning and unscientific. They would urge in objection, that a philosophy committed beforehand to the support of Christianity must thereby abandon its scientific independence. Moreover, Christianity in form is a historic narrative, — a simple record of facts, a story of events, a portraiture of persons: what can it possibly have to do with philosophy, which concerns itself only with forces and laws and principles? Then, again, the events and personages which Christianity records are supernatural; whereas science and philosophy know nothing of the supernatural, but are limited altogether to those forces which are natural, and those laws which are constant and fixed. Philosophy also addresses itself to the Reason, whose principles of evidence are clear and unchangeable, and whose methods of inquiry are definite and uncompromising. Christianity also appeals to Faith, which, whatever it may be as a process of belief or conviction, is neither compelled by demonstration nor silenced by experiment. The spirit of Science is aggressive and self-relying. The spirit of Christianity is self-distrustful and confiding. Christian knowledge, moreover, thrives in the sphere of emotion and aspira-

¹ Delivered as a lecture originally at Cincinnati, March 31, 1877.

tion. It requires and rejoices in the genial warmth of the affections and the hopes. But science admits no other light than the cool and dry light of reason: it shrinks from every influence which does not either justify or compel conviction. To finish the argument, Christianity has jealously withstood every advance of science which has questioned its dogmas, and every attempt of philosophy to try its conclusions by verifying processes and tests. Science has made progress just in proportion as it has been indifferent to these fears or braved this hostility. For these reasons, there can be no propriety in recognizing any philosophy as Christian. It should be esteemed a positive offence and dishonor to science to teach any of its principles in the interest of, or with any reference to, the Christian faith. It follows that each can serve itself best by leaving the other to itself. Let each be content with its own methods, its own criteria of truth, and its own conclusions, and be entirely unconcerned with any possible relations which it may hold to the other. These views are not held by scientists and philosophers only. They are accepted and enforced by not a few Christian thinkers, and in the interest of their faith. Whatever may be the spirit in which these views are held, it cannot be overlooked or denied that they are extensively received and earnestly propounded by many scientists on the one hand and Christian theologians on the other.

I propose briefly to inquire how far these views are just, and, in doing so, to ask whether there is any such thing as a Christian philosophy, and, if there is, what are its limits and its extent, what subjects it excludes and what it embraces within its sphere, — what are its methods of inquiry and its grounds of conviction.

I. I would ask you to consider *first* that Christianity is *more* than a history. It is, indeed, a record of facts and events. But these facts and events are significant and important only as they illustrate important principles and truths. Though they do not prove these principles, they assume them to be true, — as that there is a personal and self-existent Creator, the originator of the forces and the upholder of the laws of nature, who can be known by man, who is interested in man, and can be honored and loved by man; that man is morally responsible to himself, and therefore to God, and needs guidance and help from God; that he is destined to, and capable of, another life. It is to man as such a being that God reveals himself, according to the Christian story. It is these truths concerning God and man which give to the events of this history all their significance and interest.

II. Christianity does more than assume these truths. It also *enforces* them. Rather it assumes them that it may enforce them, if its story is true, by the most impressive and moving of all manifestations of a personal character, such as touch the affections and conscience, and arouse and stimulate the springs of action. It is true, it does not utter these truths in the language of the schools. It scarcely propounds or recognizes them in abstract language at all; but it impersonates them in living beings, whose looks and words and acts move to a believing and loving response. And yet these truths and principles, for all that, are ever present, and give to these personal acts and words all their meaning and interest.

III. Every one of these truths has some possible or actual relation to scientific thought. As a consequence, Christianity is brought into permanent relations to phi-

losophy. Let any one of these principles be set aside as impossible or false, and the Christian history becomes either untrue or insignificant. Let philosophy show to its own satisfaction that God is a fiction of the fancy ; or an impersonal force ; or that he is only a name for the universe itself as an organic whole ; or that, while he exists, he cannot be known ; or that, so far as he is known, he must be falsely known ; or that man is without moral freedom, and therefore incapable of moral responsibility ; or that the future existence of man is scientifically impossible, — and the interest and force of the Christian story are necessarily set aside. It becomes nothing but an interesting record of a faith which once was living, but now is dead. What had been a temple filled with believing worshippers becomes a mausoleum, in which the curious stranger hears the hollow echoes of his solitary footfalls as he walks over the tombs below, — in which all the men who once worshipped above now sleep beneath ; and with them are buried forever all that made the temple a hallowed fane.

IV. These truths, if they need any proof, or are capable of being proved, are in no sense dependent on the testimony of Christianity, but must be tried at the bar of philosophy. When we say they must be tried in these courts, we do not assert that the evidence on which they rest is either demonstrative or experimental. It may be neither. It may be of a kind peculiar to itself. It may be intuitional and self-sufficing, or possibly, so far as our argument goes, is supernatural. We care not to inquire or to answer, so long as it is clear that philosophy must either pass judgment upon this evidence as satisfactory, or at least as not inconsistent with its previous decisions, or perhaps send the case to a court to which it allows jurisdiction concurrent with faith itself.

V. For these reasons the principles of Christian philosophy are easily, and they ought to be carefully, distinguished from the truths of Christian theology. The truths of theology *are*, and those of philosophy *are not*, supported by testimony. The relations of the two to scientific evidence and proof are for this reason unlike. We grant that truths of theology proper, when accepted on testimony and by faith, hold an important relation to philosophy in that they must be believed to be scientifically possible and credible, and to a certain extent must be defined and explained and arranged after scientific methods. Every system of theology seeks to be in this sense scientific. Every catechism is an introduction to the science of Christian theology. So far as Christian truths are defined and explained, they constitute such a science, whether the principles are received on the authority of the Scriptures, of tradition, or of the Church. On the other hand, Christian philosophy, as contrasted with Christian theology, limits itself to those truths, and to those relations of truths, — whether they are historical or revealed, personal or supernatural, — which in some sense shine by their own light, or rest on the evidence of Reason.

VI. The nature of Christian philosophy is brought into bolder relief by the fact that its distinctive principles have been held by not a few men who did not accept Christianity as historically true or in any sense as supernatural. Socrates, Plato, Marcus Antoninus, Theodore Parker, Francis Newman, are by no means isolated examples. Not a few of these men have held these truths, not only by intellectual belief, but with a fervid personal faith. But they held them as philosophers by a necessity and conviction that were intellectual, and a logical consistency that was scientific. They

carried these principles into their theory of the universe, both the physical and the spiritual, adjusting to them their judgments of nature and the soul, of man's history and man's destiny, of society, government, and law, of their ideals of human life and attainment; thus bringing their applications into intellectual consistency, and binding their conclusions into a more or less coherent scientific system.

VII. In like manner there have been held in ethnic and Christian schools a variety of theories antagonistic to and destructive of what we call a Christian philosophy, — theories which have denied thought or purpose in the universe, and substituted blind force for intelligent origination; which have resolved the order of the kosmos into the struggling forces of these self-existing and self-impelled atoms, which swim in the chaos of their drowned compeers; which have denied any care for man, or power to help, on the part of God; which have excluded from man any foundation for moral self-respect or moral responsibility, and have bravely accepted and frankly avowed the consequences of their theories in some one of the manifold varieties of materialistic atheism. We cite Democritus, Lucretius, and Hobbes as holding theories of this sort. We might cite not a few men now living, were it not easy for such to disown affinity with the older atheists by a newly invented terminology for very similar principles. The fact that Christianity makes certain truths more definite and vivid, and re-enforces them with new effect, and invests them with the glow and fire of personal energy, does not make these truths to be any less philosophical in their nature, any more than the fact that some non-Christians hold them makes it improper to speak of a Christian philosophy.

Why, then, it may be asked, if this philosophy may be and has been held by those who receive and those who do not receive the Christian faith, — why do we call it distinctively a Christian philosophy?

1. To this question we answer : Because it is a simple matter of fact, that Christianity first forced these truths effectually upon the world's attention and the world's acceptance by means of its supernatural claims and its supernatural history, and caused them to be largely accepted as those principles of scientific thinking which now commend themselves to man's reason, and shine by their own light. In defending itself, Christianity has been forced to defend these truths on grounds of reason against the attacks of subtle and powerful antagonists, and sharply and still more sharply to define them, under the unsparing scrutiny of keen-sighted critics. In these attacks and defences these truths have been brought into every conceivable relation to other truths and theories, both of science and religion. When the discussions have seemed to be purely theological, they have very often, if not more frequently, turned upon some principle of this underlying philosophy. It does not follow, because Christianity has inwrought certain truths into the world's philosophy, that it has taught them by authority, or enforced them by miracle or testimony. This inference is excluded by the undisputed fact, that, in its use of miracle and testimony, Christianity assumes these principles to be accepted and to be necessary in order to give force or significance to miracle or history, and that again and again it has rested its cause on grounds of philosophy alone. Much is said in these days of the hinderance which Christian theology has been to science and philosophy. Much might be said

of the stimulus and aid which it has given to both in the world's enlightenment.

2. Not only has philosophy been stimulated and shaped by the earnest thinking of Christendom upon Christian themes, but it has moulded Christian civilization and organized Christian institutions. The civilization and institutions of modern life are the products of Christian ideas, — to a large extent of the positive and supernatural facts which Christianity asserts, but always of the great verities which give these facts their significance. The amenities, the manners, the legislation, and the jurisprudence of modern life are the always blooming flowers and the ever-ripening fruit of those ideas of God, of the soul, of duty, and of immortality, which Christianity has made sacred and energetic. In other words, Christianity has given the world a peculiar and practical philosophy of belief and of life, which has become a new atmosphere for its thinking and feeling. This atmosphere pervades the streets of every city, it is diffused through forests in which man dwells far from man, carrying protection and courtesy and honor and truth where otherwise lawless violence and brutal rudeness would have been unrestrained. The complicated organism of modern life, which we call its credit and its commerce, its culture and its arts, its morality and its refinement, is constantly renewed by the force of these ideas of Christian philosophy, which are the life-forces of the ever growing and ever more ramified structure: as the oak which has stood for centuries feels the force of one life through every fibre and leaflet and bud. Let these ideas fail by the prevalence of an anti-Christian philosophy, or let them be weakened in their force, and the structure will lose its coherence, and show by its slow or sudden ruin how

powerful and necessary to its existence were the truths which gave it strength and beauty. We may *conceive*, if we do not believe, that faith in Christianity as a *supernatural force* should die out, and the strength and beauty of modern life should remain; but we can neither conceive nor believe that faith in the truths of Christian philosophy should fail, and this fair structure should escape the dry-rot which must slowly sap its strength, or the swift ruin which would attend its sudden fall.

3. Christian philosophy, however, like philosophy in general, should be sharply distinguished from any one of the special sciences. It would be absurd and unmeaning to speak of Christian physics, or Christian mathematics, or Christian geology; but it by no means follows that it is unreasonable to speak of Christian philosophy. The reason is obvious. Every single science is limited to a special class of phenomena and certain easily distinguished powers and laws. But philosophy concerns itself with those powers and relations which are common to many phenomena, and which are the conditions of every special science and of all scientific thinking. A special science may be prosecuted without either asking or answering the question whether there is a God; or whether the spiritual agent, vulgarly called the human mind, which builds its knowledge into a science, can be material in its essence or evolved from matter; or what are the grounds of our belief in the order of nature; or is there a purpose or design in the universe; or can the soul survive the body. These questions are more or less properly questions of philosophy, as it is distinguished from any one of the sciences. That this distinction is well taken will appear from a few examples. Physics is limited to mechanical or molecular

forces, and the bodies in which they inhere. It treats of adhesion and impulse and pressure, in molecules and masses and liquids; of *matter*, as its parts cohere in solids, or flow in liquids, or are repelled in gases; as it undulates in light, or expands and glows in heat, or palpates in electricity; as it manifests force, now as heat or electricity or light, or as capacity for mechanical work. Chemistry, again, has to do with another set of properties and relations, by which two or more elements unite in a result unlike either, and attract and repel each other in definite proportions. Physiology has to do with another set of activities and relations, by which living tissues are formed that manifest peculiar properties, and organs which perform special functions.

As common and essential to all these, mathematics, again, has to do with *pure* quantity as conceived by the mind, as in geometry and algebra, and with applied quantity as in mensuration, surveying, engineering, gunnery, and other arts of man; or on a larger scale in astronomy, that measures and weighs the celestial masses in their movements, and predicts their places; or in chemistry, that combines and repels its molecules in strictest obedience to the relations of number by a skill and thought even more consummate — if indeed the vast universe of masses and the minute universe of molecules have a thinker at all.

The agents and powers with which physics, chemistry, and physiology are concerned exist together in the same universe, and have some common relations with one another. Mathematics has relations common to all, for its quantities are recognized in all and applied to all. Inquiries respecting the conceptions which enter into each of the several sciences, whether they are assumed as existing in the universe, or as governing the mind of the scientific inquirer in his efforts to interpret

the secrets of nature, necessarily define the bounds of *philosophy* as distinguished from *science*.

These inquiries will compel us to ask whether thought or blind force originated and rules the universe ; whether man, who interprets the universe, can intelligently solve its riddles, or whether he is always impelled to guess ; whether he shall, or shall not, outlive the matter over which his triumphant thought and skill is perpetually proclaiming him master and king. That there is such a science, which is the science of the sciences, or the *prima philosophia*, has been recognized by all thinkers, from Aristotle down to Huxley and Tyndall, however imperfectly many have conceived or defined it.

It is not my object to define or describe this underlying and fundamental branch of knowledge, or to insist that philosophy is its fitting name. I desire only to show that it cannot be suppressed, and that it proposes and seeks to answer the most interesting and important questions which can occupy man's intellect or which concern his destiny.

4. These points being established, I proceed to say, that a man may be a very eminent scientist without being an eminent philosopher. He may even be pre-eminent in his mastery of a single science without giving special attention to the philosophy of the very science of which he is master. To be eminent in astronomy or physics or chemistry or physiology, one needs only to accept the conceptions and definitions which the great discoverers have gained, without inquiring into the exactness of these definitions, or the consistency of one definition with another, — much less without asking or answering any questions concerning the relations of his own science to other sciences or to the sciences in general. These sciences are very largely

sciences of observation and experiment. As such, they permit the amplest range for the energy of many a zealous devotee, who would be hindered and distracted if he concerned himself with their underlying philosophy. It is only the more inquisitive minds, the minds of larger and more generous spirit, which cannot be restrained from searching after the authority of the principles and laws which he is daily and hourly applying.

Even in the pure mathematics—the science of abstractions, whose elemental air is transparent ether itself—a man may be eminent in resolving problems and inventing theorems,—he may accept the axioms without asking after their authority, and use the definitions without inquiring concerning their fitness,—much more without ever caring to inquire what is the mental process by which the mind gets possession of *the point, the line, the circle, the cube, or the sphere*; or what is that mysterious entity which men call space, in which these geometrical constructions seem to float, as fish in the sea, and to which the reasoner is always referring, whether he knows it or not.

5. If now we turn to the special sciences which concern themselves with the human spirit, we find these lying nearer to philosophy, as we use the term, than the physical sciences, in which observation and experiment test every theory and try every definition. It cannot be true that the phenomena of knowledge and feeling are energies any the less real or potent than are the manifestations of gravitation or electricity. It must be true, moreover, that electricity and gravitation are nothing except so far as they are known. The act of knowing is superior to all others. It is itself the agency by which nature re-appears in the form of a demonstrated science, or is explained by a sagacious theory, such as

the leaders of science are now and then inspired to frame, as those of Copernicus and Newton and Faraday, and possibly Darwin, or is tested by decisive experiments, such as Franklin and Davy have devised by skilful invention. The agency of knowledge in interpreting nature is as real and potent an agency as any of the powers of nature which it brings out of their hiding-places, and forces to declare the secret of her working. If the power of knowing is as real as any force which is known, it is not lower but higher in rank because it cannot itself be tasted or seen or touched, or weighed by the pound, or measured by the inch. Let us also remember that itself sees and touches and weighs and measures, not gravitation and electricity alone, but every property and relation in the universe, from any of the single forces, which, as light and heat, pervade all space, to any momentary combination of two or more, under which the gossamer floats and glistens in the sunbeam, or which whirls the atoms or molecules around their centres, or hurls the gaseous particles with tiny but unfelt strokes against the elastic walls, which they expand but cannot break.

Is mental force any the less real, or less worthy of scientific study, because its energies and intensities cannot be weighed and measured? Surely it cannot be in the estimate of him who remembers that itself weighs and measures all physical energies, and can even construct, by processes which it is itself puzzled to explain, the entities of geometry and number, and yet is forced to set them up, it knows not why, as the tests and standards of trustworthy knowledge. The science which has to do with the intellect of man has indeed, like chemistry and physics, its own special subject-matter; but, inasmuch as this very subject-matter is the function of knowledge itself, it cannot be studied as a

special science, and prosecuted, without leading to the portals of what we have distinguished from all the special sciences by the name of Philosophy. The same is true of ethics, or the science of the ends and rules of human activity. This science, like physics and chemistry, deals directly with its own limited subject-matter. To this subject-matter the adept must in a certain sense limit himself if he would understand his materials and master his tools; but he cannot completely cover his own department unless he studies man in his relations to his fellow-man, to himself, to the animal creation, to the future life if there be such a life, and to his Creator if He can be known. Let him seek never so earnestly to confine himself to ethics alone, he will find, before he is aware, that he has entered upon the field of philosophy, and within this into the department of Christian theism or that of anti-Christian, and possibly also of anti-moral atheism.

6. No special science can possibly fall out with a true philosophy, or come in conflict with it. You might as soon conceive that a house should fall out with a solid foundation, or a tree should come into conflict with its well-established roots. The teachings of the two can never conflict. If it can be shown that a theistic philosophy, or a philosophy which recognizes a plan of benevolence in the universe, involving responsibility for man and the possibility of immortal life, is the only rational or the most rational explanation of the processes which every special science conducts, and the axioms on which it rests, then there is no place for any conflict to arise between any special discoveries which any science can reach, or the processes by which they are attained, or the faiths which these processes assume. Each has nothing to fear from the other. The two cannot possibly come into collision.

7. In order that such a philosophy may show itself to be true, it must show itself to be broad enough for every science to rest upon, — the sciences of spirit, with their peculiar properties and laws, as truly as the sciences of matter, with the properties and laws of each. It must explain every description of phenomena, the moral as well as the rational. It must provide standing-room for all: it may exclude none. It cannot be inconsistent with any.

Mathematics and physics and chemistry, and physiology and geology and psychology, and ethics and political science, and even theology and religion, must each be recognized. The rights of each must be acknowledged. A philosophy which is subjected to such a test as this, which is constantly liable to criticism and complaint from every party, cannot be charged with hostility to any because perchance it may assert that belief in spirit, in God, and in immortality, is a necessary condition or consequence of its being a philosophy at all. I do not assert that there is no exposure to mistake or error in determining the true philosophy; but these exposures are trivial as long as it is tried by scientific methods, and sought for in a scientific spirit. If it is urged that there are biassing influences in favor of a philosophy which satisfies our higher wants and aspirations, we reply that there are also biassing influences against such a philosophy. If theism attracts some minds on what are called theological grounds, atheism does the same. For atheism is as truly a theology as theism, and now and then seems capable of kindling a zeal which overleaps reason, and flames into a fanatical ferocity.

8. On the other hand, there is serious danger lest the devotees of a special science should make it the rule for

every other, and exalt it into a fundamental philosophy. Some of us remember the fable of a besieged city, for whose defence a council of citizens was called, representing the chief occupations of its inhabitants, and how, after each man had set forth the virtues of the material he dealt in, the tanner contended, that among all there was nothing *like leather*. This story is exemplified in so grave a matter as the philosophy of the universe. The ultra-materialist will not believe that any thing is real except matter, or that there are any properties or laws which science is bound to respect except the properties and laws of matter.

It is no dishonor to the devotees of the physical sciences to assert that they are especially exposed to this temptation. These sciences are, as they ought to be, largely sciences of observation and experiment. While their phenomena naturally engross the attention and occupy the thoughts of the many, the *philosophy* on which they rest is a matter of curious interest only to the few. It has no direct interest for those who are occupied with ordinary physical researches. It is not surprising that such men should be ready to explain the phenomena of life and of spirit by the forces and laws with which they are familiar, and be prepared to believe that matter and motion account for the existence of the universe and the occurrence of all its phenomena. This is less surprising in consideration of the fact that so great a variety of the most refined material forces, as light and heat and electricity, have, to the satisfaction of many, been resolved into a single force, and that this force has been ascribed to the capacity of material particles for varied forms of motion. If this be so, the physicist reasons, let the material be a little more refined, and the motions be more subtle, and matter will put on the phenomena of life. Let the process advance to a

higher potency, and spirit will appear in its feebler and humbler forms ; let it proceed still farther onward and upward, and the highest forms of intellectual and moral activity will be manifest. If what was once dead matter can, by forces and agencies within itself, be sublimated to these finer activities, — if that which seems so gross can be finely touched to issues so fine as these, — then the universe of matter, self-moved to the noblest manifestations of thought and feeling, has no occasion for any other intelligence than such as sleeps in its own atoms, and can be evoked by a happy combination or a chance impulse of its own. The growth of materialistic evolutionism is similarly accounted for. Let the phenomena of life attract the scientific study of a generation of devoted students. Let the mysterious process of growth from the seed to the plant, and the embryo to the perfected animal, be the subject of curious yet familiar interest, and development becomes the word of the hour, at once exciting the curiosity by its peculiar mystery, and then sating it by its frequent recognition, till its mystery shall have evaporated into a commonplace. Let it be discovered that development has a wider range and application than had been supposed, even among living forms and beings ; that many so-called species have originated from simpler forms of life. Let the truth be accepted among zoölogists and palæontologists, that a law of progress can be traced from simpler to more complex forms of life, from the fossil period down to the present. To any conclusions of this sort philosophy can have no possible objection, provided they are sustained by scientific evidence and are supported by scientific arguments. But when the analogies of the growing seed or embryo are extended to lifeless matter, and made the substitute for creative force ; when an unthinking tendency to variation, coupled with a ten-

dency to conservation equally blind, are asserted to be the last formulæ which philosophy needs; when stardust, rushing from a rarer to a denser medium, is deemed the only and the ample explanation of the structure and order of the planetary system, of the production of air and water and earth, of the production of animal and vegetable life, of the manipulation of sensitive, intellectual, and spiritual activity, of conscience, law and religion; when, in short, the development of the germ of plant or animal is accepted as the ultimate solution of the evolution of the kosmos and of all which the kosmos can reveal, even to the mind of a Humboldt, which reflects it by scientific explanation, — then we have a right to say, in the name of philosophy, that the idols of a single private chapel of knowledge shall not be admitted into its sacred fane, and lifted up upon the high altar of its worship. And we do this with reason; forasmuch as the doctrine of evolution, even if it were true, is no fundamental conception on which all the sciences can stand, but supposes many other such conceptions, pre-eminently one, and that is, the conception of a plan beginning millions of ages past, most comprehensive of minute detail, infinite in the possibilities which it realizes and rejects, and steadily pressing forward towards its fulfilment, — in a word, supposes creative energy with unexhausted capacity and intelligent wisdom.

In some of these remarks I have anticipated the discussions which lie before us. The remarks may, however, serve to impress the conviction which thinkers of all schools of science are beginning to acknowledge, that the questions which are now agitating the devotees of any department of knowledge can only be answered by asking profounder questions in respect to man's

nature, i.e., his capacity to know either matter or mind ; in respect to the essence of matter, of life, of sensibility, of science itself ; in respect to duty and right and immortality ; and again, in respect to the destiny of man as an individual and as a race, in the present and in the future life, — most of all in respect to God : whether science compels us to recognize him, or must shut and bar forever the brazen gates which seem to lead into his inner sanctuary, and thus forever delude and tantalize the successive generations which stream towards those gates by painted and gilded mockeries which at a distance seem to reveal the mysteries of the highest truth, and on a near approach vanish like the vapor before the sun.

Questions of this sort agitate thinking men to the very depths of their being. They cannot be evaded. They can only be answered by cherishing the truly scientific spirit, — that spirit, which, according to the great expounders of the modern scientific method, is coincident with the spirit which the great Master of Christian truth declared was indispensable to a man who desires to enter into the kingdom of heaven. In prescribing this spirit in searching after truth, the greatest of teachers has given the sufficient rule and inspiration for all philosophical inquiry. For this reason, and manifold others, we believe, that, when he founded the kingdom of God upon earth, he provided a place, and a very large place, in it for a Christian philosophy.

IV.

*THE AUTOBIOGRAPHY OF JOHN STUART MILL.*¹

THE reasons are manifold why the life of John Stuart Mill should be interesting. His personality was unique for both weakness and strength. His education was something marvellous in its way, perhaps more marvellous than that of any English-speaking youth of the present century. His career was almost a romance, if it be not quixotic to apply the epithet "romantic" to a man who was so completely a metaphysician and a radical.

If we recall the contempt and ostracism which were bestowed so energetically by all England upon the little knot of speculative radicals with whom Mill identified his youthful fortunes, and watch the influence which they gained in each successive decade, till, at the death of their acknowledged leader, all England noticed the event as the going-out of one of its greatest lights; and if we also reflect on the place which Mill made for himself towards the end of his life in the Common-rooms of the great universities, where, thirty years before, his name was mentioned only with contemptuous sneers, — it is impossible not to wonder with amazement at his success, even if we fail to accord to it our unmingled sympathy.

As a laborious and indefatigable toiler in the abstract sciences, Mill has certainly made his mark more em-

¹ Scribner's Monthly Magazine, March, 1874.

phatically than any man of his generation, unless we except the great Scotchman with whose opinions he so boldly grappled, or the more adventurous agnostic who walks with confident footsteps over the path which Mill opened with a cautious and stealthy pace. As a devotee of political economy, and a sturdy champion for legal, social, and political reforms, he was always conspicuous, and never would acknowledge defeat. In all these particulars Mill's life was remarkable, and the story of it is most worthy of attention. But most of all is it remarkable for another reason. His ethical and religious faith was essentially, if not avowedly, atheistic, and, being such, may be taken as a representative of that of many speculative and cultured men of the present generation. Of the man who held this faith we have not the life only, but the life as narrated by himself, and narrated with a freedom and minuteness which are as uncommon as they are instructive.

It is with this aspect of his life that we propose to concern ourselves, and with this only. Mr. Mill has chosen to write the history of his own religious and ethical opinions, and of the character which was moulded by them. He has done this with singular frankness, and with a marvellous indifference to the favorable or unfavorable judgments of his fellow-men. We propose to follow him in a spirit as dispassionate as his own, to inquire into the causes which produced this somewhat extraordinary phenomenon, and to estimate the worth of the product itself, not by the ordinarily received standards of natural or Christian theism, but by those which we may assume to be accepted by cultivated men, irrespective of any theological prepossessions.

We deem it necessary to premise, that we accept Mr.

Mill's account of himself as unprejudiced and true. We do not care to go beyond his own narrative for our *data*, or to judge of his culture, his aims, or his conduct, by any other testimony than his own. Not a little has been said by his critics in the way of detraction from the correctness of some of his statements, and of addition of facts omitted by him, particularly in respect to his relations to Mrs. Taylor. We prefer to disregard all this supplementary matter, and to accept without question the statements concerning his conduct and motives which are given by himself.

Mr. Mill introduces a sketch of his father very early into his own autobiography. He does this very naturally, for his father's personality and principles exerted a controlling influence over his own from his birth to his death. The filial deference with which the son uniformly speaks of his father is discernible in all his writings, and is very conspicuous in this history of his own life. It is with painful delicacy that he alludes to his growing want of sympathy with him as his own life went on, and with tender satisfaction that he notices how, towards the end of that life, he interested himself in re-editing his father's principal work on philosophy. Mr. George Grote shared in these feelings, and expressed the warmest satisfaction in furnishing matter for the same re-publication, that he might testify his gratitude to the man who had done so much for his own education and his own practical principles. The man who impressed himself so powerfully upon such men as John Stuart Mill and George Grote, long after his own death, must have been an extraordinary man.

James Mill was a Scotchman, with a self-reliance and a capacity for self-assertion which surpassed that of any other Scotchman of whom we are informed, marvellous as the possibilities and achievements of Scotchmen

are said by some to be in these regards. He was trained originally as a beneficiary student for the ministry in the Scottish Presbyterian Church. But he "had by his own studies and reflections been early led to reject, not only the belief in revelation, but the foundations of what is commonly called natural religion." Finding no halting-place in deism, "he yielded to the conviction, that, concerning the origin of things, nothing whatever can be known." And yet the son insists that he was not a dogmatic atheist, and that he even held that such atheism was absurd. He says, strangely enough, that his father was led to abandon theism on *moral* rather than on intellectual grounds. "He found it impossible to believe that a world so full of evil was the work of an author combining infinite power with perfect goodness and righteousness. Indeed, he rather preferred the Manichean theory of two separate originators, or principles, of good and evil." If he was not a dogmatic atheist, he was disposed to be a dogmatic Manichean. If not a dogmatic atheist, he was sufficiently dogmatic as an anti-theist and anti-christian, holding, with Lucretius, that all religion, whether natural or supernatural, is essentially demoralizing: indeed, "as the greatest enemy of morality, first by setting up fictitious excellences, belief in creeds, etc., . . . but above all by radically vitiating the standard of morals, making it consist in doing the will of a Being, on whom it lavishes, indeed, all the phrases of adulation, but whom in sober truth it depicts as eminently hateful. . . . This *ne plus ultra* of wickedness he considered to be embodied in what is commonly presented to mankind as the creed of Christianity." Mr. Mill warms as he proceeds in expounding this "dogmatism" of his father, and insists, for his own part, that although the demoralizing con-

ceptions of the object of the Christian's love and worship are largely mingled with and modified by the ideal excellence which he may derive from other sources, yet they cannot but exert a pernicious influence in disturbing and clouding this very ideal.

At the risk of dwelling upon a point which ought to be self-evident, we observe that Mill the father, as described by the son, does not appear to refer to any of the hard sayings in the Scottish Calvinistic creeds as the grounds of these wholesale attacks on every form of religion, but to certain *hard facts* in the economy of the universe, which must, in his view, compel any man who believes in an intelligent Creator to accept such views of his character as must be demoralizing. He therefore preferred not to believe in God at all, and, in order to save his morality, he accepted the Manichean theory as nearest to his approximation to a religious creed. How this creed could be eminently moral in its influence he does not affirm, and it would be hard for him to prove.

It is important also to notice that the phenomena of the universe as seen by our brace of philosophers, with one God, or no God, or two Gods behind them, were observed through the spectacles of a private philosophic theory of their own, which might, possibly, have had something to do with the conclusions which they reached in respect to the demoralizing influences of all religion. This theory of theirs embraced two cardinal principles, — the doctrine that man is the creature of circumstances, and that his circumstances determine his character through the predominance of the associations which are formed by his environment. Mill the father adopted very early the fatalism of Hartley's "Observations on Man;" and Mill the son made it the business of his life to establish this as the only rational

and tenable theory of human progress and perfectibility. It is very easy to see how, on the principles of this philosophy, which both the Mills accepted as indisputable, they should arrive at very peculiar conclusions in respect to the rationality of theism and Christianity, and the possibility of holding any creed concerning God which should not be demoralizing. This Hartleian fatalism itself, in the view of many who reject it, is a theory which seems to be utterly inconsistent with the possibility of morality of any kind. A witty American writer, who is never weary of attacking what he calls Calvinism as fearfully demoralizing, seems almost equally zealous in propagating a theory of necessitarian "mechanism in thought and morals," which is inconsistent with moral responsibility or self-respect. It is not surprising that those who hold such a doctrine should find in religion, as interpreted by their principles, an instrument of demoralization, or that they should be unable to furnish a satisfactory theory of the goodness of God in his dealings with men. We cannot but contrast the summary method with which the great problems of thought concerning these questions are disposed of by this Scottish schoolmaster, with the earnest struggles, the patient inquiries, and the triumphant faith of multitudes who have faced the facts as boldly, and acknowledged the difficulties as frankly, as he, but with whom faith in the living God as good was triumphant, and the power of Christian theism to inspire and sustain an elevated moral life was verified by the most decisive evidence.

But James Mill the *doctrinaire* was not to be put down, though all the world should be against him. With a self-confidence which was almost sublime, and a power of self-assertion which would seem to be indomitable, he attached himself to Jeremy Bentham, and be-

came a devotee to his projects for social and juridical reform. With a strong interest in political economy, and an ardent faith, in spite of his Manicheanism, in the perfectibility of man by means of democratic government and representative institutions; with a keen sense of those social inequalities and traditional abuses which were so fearfully rank in England, even in the first two decades of the present century; with a strong interest in history, and a comprehensive capacity to discern the workings of institutions,—he adopted most of the theories of Jeremy Bentham, and gave all his energies to his proposed reforms, many of which at that time seemed quixotic. His “History of British India” brought him into public notice, and secured him in 1818 a place of influence and pecuniary support in the East India House. Being capable of immense intellectual labor, and of untiring energy, he became the inspiring genius of the few rising young men whom he could gather about himself, as well as an indomitable worker in the cause of radical reform. His most important services to his generation, however, were rendered by the education of George Grote and John Stuart Mill. Over the latter he had complete control, and he began with him at the earliest possible period.

The son was born in 1806, — twelve years and more before his father was installed in the India House. During these years the father was dependent on literary labor for his subsistence, and yet contrived to do the reading and writing which were necessary for the composition of his great history. With these burdens upon him he began to teach the boy Greek when three years old, and taught him so well, that he had read some of the easiest, and one of the most abstruse, of Plato’s Dialogues, with Herodotus, parts of Xenophon, etc., by the time he was seven or eight. To Greek, arith-

metic was added. At eight he began Latin. After he was five or six, he began to read history, and recited to his father, in his daily walks, from a large number of standard ancient and modern historians, reading copiously also in voyages and travels. Of children's books he owned only "Robinson Crusoe," and borrowed "The Arabian Nights," "Don Quixote," Miss Edgeworth's "Popular Tales," etc. When he began to learn Latin, he assisted in teaching his brothers and sisters, and took up the Greek poets. From eight to twelve he read an appalling amount of Latin and Greek, finishing with Aristotle's Rhetoric, and throwing in a second large instalment of ancient and modern history. Of poetry he read somewhat, and wrote English verses. From twelve to fourteen he read considerable portions of Aristotle's "Organon," and did not a little logical analysis; read Demosthenes for pleasure, and some of the most important Dialogues of Plato, also Tacitus, Juvenal, and Quintilian; and assisted his father to read the manuscripts and proofs of his history as it went through the press. When he was thirteen and more, he was put to the study of political economy, and at fourteen his regular education was finished. His father was an exacting though a stimulating teacher, and often presumed on greater maturity of intelligence than he found. He was careful to guard his pupil against self-conceit, inculcating the lesson upon him, that if he should find, on comparing himself with other persons of his age, that he knew more than they, he must remember that it was because he had enjoyed special advantages. The son thinks that he had no arrogance when a child, and knows that he had no special humility. He owns that various persons who saw him in his childhood thought him "greatly and disagreeably self-conceited, probably because he was disputatious, and did not scruple

to give direct contradiction to things which he heard said."

We ought not to omit noticing, that he travelled not infrequently in England with his father and his father's friends. It is characteristic of the author to say of a sojourn at Ford Abbey, "This sojourn was, I think, an important circumstance in my education. Nothing contributes more to nourish elevation of sentiments in a people than the large and free character of their habitations. The middle-age architecture, the baronial hall, and the spacious and lofty rooms of this fine old place, so unlike the mean and cramped externals of English middle-class life, gave the sentiment of a larger and freer exertion, and are to one a sort of poetic cultivation," etc.

After the age of fourteen he resided in France for a year, becoming familiar with the language, and had a slight introduction to French domestic and social life, studying somewhat under French professors. On his return he resumed his ordinary studies, prosecuting the branches (in the main self-directed) which he had begun, and giving himself especially to the study of jurisprudence, political economy, and psychology. He attaches special importance to his reading of a book published under the pseudonyme of "Philip Beauchamp," entitled "Analysis of the Influence of Natural Religion on the Temporal Happiness of Mankind." This work was founded on the teachings of Bentham, and was prepared by George Grote, and sets forth very emphatically the doctrines of which we have already spoken, — that both natural and revealed religion are hostile to human happiness and welfare.

Of this method of education and its results we have only a word to say. That it could only have been achieved and sustained with a strong nature to enforce,

and a pliant nature to accept it, is sufficiently obvious to any man who knows even very little of boys. That the pupil read and studied as he describes, we have no reason to doubt. We cannot suspect Mr. Mill of exaggeration as to the principal facts of detail, although we might suppose him to deceive himself as to the amount of intelligence which he brought to these studies. That his judgments concerning himself are inclined to be suave and sanguine is evident from many pages of his writings. But we can easily believe that a boy of so gentle a temper and so passive a nature as his, with great capacity to acquire, and no little acuteness of judgment, should have been stimulated, by a powerful and energetic nature like his father's, to the achievements which he describes. One thing he says of himself, which seems to be highly probable, viz., that he learned how to *know* better than how to *do*; that he was singularly helpless in managing and providing for himself, whereas his father was singularly handy and self-reliant. So far as we can judge from his writings, it was one of the great defects of his nature, that, while he was apt at books, he never learned to know, not only how to do things himself, but how they were done by other men. In other words, he was singularly deficient in common sense in respect to doing of all sorts, whether the doing concerned the management of a household, the conduct of a commonwealth, the relations of the sexes, or the government of the universe. The disabilities which he incurred from this forced and secluded training were aggravated by the circumstance that but few persons visited his father's house, and he was conversant with a very limited society, and rarely had intercourse with boys of his own age. His childhood, he thinks, was happy; though his father failed in tenderness, and was averse to any manifestations of affection.

In respect to religious belief, he says he never had any. "I am one of the very few examples in this country, of one who has not thrown off religious belief, but never had it: I grew up in a negative state with regard to it. I looked upon the modern, exactly as I did upon the ancient religion, — as something which in no way concerned me. It did not seem to me more strange that English people should believe what I did not than that the men I read of in Herodotus should have done so. History had made the variety of opinions among mankind a fact familiar to me, and this was but a prolongation of that fact." This is sufficiently *naïve* at the first aspect: at the second it may raise a question whether this record was a simple remembrance from childhood, or an interpolated argument from the unconsciously sly old man. If it were the one, its validity as an argument should have been transparent to the veteran practitioner of logic. If it were the other, it can be excused by the abundant evidence which is furnished in his writings, that he had acquired so firm a faith in himself as to be unable to suspect himself of being either disingenuous or simple, although his readers might be certain that he must be one or the other.

If Mr. Mill is to be judged as a boy by the ordinary examples of boyhood, we should say, that had he been trained to say his prayers and to go to church; had he learned hymns and the catechism, in addition to Greek, Latin, and logic, before he was twelve years old; and had he been as docile in religion as he was in his other studies, — he could not easily have failed, under his secluded training, to be a conceited prig, in spite of the sweetness of his temper and even the ardor of his piety. Conceding that he had achieved the serene indifference to the Christian beliefs of his countrymen which he describes, and had accepted with confiding assurance

the conclusion that all religions are alike demoralizing nuisances, he must have been very unlike most other boys not to have had some rather decided temptations to what "the Methodists" call *spiritual pride*. When, for example, as he walked on Sundays by an open church, and looked in upon its demoralizing worship with somewhat of the shudder with which the Christian boy of twelve regards the rites of heathen service, it would have been difficult for him to withhold the thought, which in a theist would be a prayer, "O Lord, I thank thee that I am not as other men are; that I never fast and never pray, and firmly believe that it is the height of demoralizing superstition to conceive that the universe is ordered by infinite goodness." As at present advised, we must say, that, as between the two sorts of prigs, we much prefer the Christian to the atheistic variety. Mr. Mill was not a little of a prig from childhood to the end. As for the average of boys, we would rather take the chance of the *demoralizing* influences of Christianity than of the demoralizing influences of Atheism or Manicheanism, even when attended by the purest ethical examples and the sternest and loftiest precepts. As to ethics, those of the father were formed by the best models of the Greek philosophy, at least so the son thinks. He was self-confident, self-governed, delighting in labor, and rejoicing in self-control. He found his chief happiness in intellectual activity and achievement, and enforced the same rule upon all over whom he had influence. One thing strikes us unpleasantly in both father and son. The father taught the son to keep his opinions in respect to religion to himself, because at that time they could not prudently be avowed. This advice indicates that the Greek ethics had not altogether transformed the canny Scotchman into a son of light. This practical lesson, the son

acknowledges, was attended with some moral disadvantages. What these disadvantages were he leaves his readers to conjecture, assuring them that he never shrank from avowing his religious views to his companions when there was occasion. One boy was shocked, as well he might be; another tried to convince him of his error, but without success. He proceeds to remark, that at present there is less occasion for atheists to hesitate, from motives of prudence, to avow their opinions, and adds, with the greatest positiveness, that there is a much larger number than is supposed of the most enlightened and virtuous of cultivated men who hold such opinions, and that these are uniformly more truly religious than any other class. It has now come to be acknowledged, he says, that a deist may be truly and eminently religious. But he assures his readers that this is emphatically possible and true of many whose belief falls short of deism, "because they have an ideal conception of a perfect Being, to which they habitually refer as the guide of their conscience." All this we do not care to discuss or to dispute. We only say, that it strikes us oddly, if this class of eminently pure and lofty souls is so large, that Mr. Mill should need to assure them that the time has now come in which they may prudently avow that atheism which they had hitherto partially or wholly concealed.

One point in the father's moral code is of special significance. "Feelings, as such, he considered to be no proper subjects of praise or blame. Right and wrong, good and bad, he regarded as qualities solely of conduct, of acts and omissions, there being no feeling which may not lead, and does not frequently lead, either to good or bad actions; conscience itself, the very desire to act right, often leading people to act wrong. . . . He blamed as severely what he thought

a bad action, when the motive was a feeling of duty, as if the agents had been consciously evil doers." This was a necessary inference from the fatalistic associationalism which he accepted. That this opinion was erroneous was subsequently discovered by the son, when he learned that morality pertains to the feelings and intentions.

In 1823 Mr. Mill (the son) obtained a subordinate place in the India House; and here he remained for thirty-five years, till the East India Company was set aside, in due time succeeding his father. He was then eighteen years old. He did not give over his habits of study, but prosecuted his plans for self-improvement, and entered upon the field of public activity as a writer for the press. The "Westminster Review" was established somewhat later. The tide of liberalism was rising rapidly, and with such accessions of strength and prestige as it had never received before. Not the least of these came from the associates of Mr. Bentham and Mr. Mill the elder. But among them all the elder Mill was the master spirit. "He was sought for the vigor and instructiveness of his conversation, and did use it largely as an instrument for the diffusion of his opinions. I have never known a man who could do such ample justice to his best thoughts in colloquial discussion." But it was not in intellectual power alone that he excelled, but "in that exalted public spirit, and regard, above all things, for the good of the whole, which warmed into life and activity every germ of similar nature that existed in the minds he came in contact with, . . . and the encouragement he afforded to the faint-hearted or desponding among them by the firm confidence" (strange faith for a Manichean, and approximating to superstition!) "he always felt in the power of reason, the general progress of improvement,

and the good which individuals could do by judicious effort." The points of opinion to which the school attached the greatest importance were the doctrines of Bentham in morals and jurisprudence, the modern political economy, the Hartleian metaphysics, and Malthus's views of population. In politics James Mill insisted on the efficacy of two things,—representative government and freedom of discussion. The greatest foes to human progress, in his view, were class interests in the two forms of an aristocracy and an established priesthood. He was a democrat from policy only,—because a free government furnishes the best securities for human welfare,—not from any theory of the rights of man. He insisted on moral obligations for similar reasons, but refused to derive the sanctions of duty from any thing that savored of asceticism and priestcraft. "In psychology his fundamental doctrine was the formation of all human character by circumstances, through the universal principle of association and the consequent unlimited possibility of improving the moral and intellectual condition of mankind by education. Of all his doctrines none was more important than this." "These various opinions were seized on with youthful fanaticism." "We put into them a sectarian spirit, from which, in intention at least, my father was wholly free." "The French *philosophes* of the eighteenth century were the examples we sought to imitate, and we hoped to accomplish no less results." "My zeal was as yet little else at that period of my life than zeal for speculative opinions. It had not its root in genuine benevolence, or sympathy with mankind. . . . Nor was it connected with any high enthusiasm for ideal nobleness. Yet of this feeling I was imaginatively very susceptible; but there was at that time an intermission of its natural aliment, poetical

culture, while there was a superabundance of the discipline antagonistic to it, that of mere logical analysis." "The cultivation of feeling was not in much esteem among us." "While fully recognizing the superior excellence of unselfish benevolence and love of justice, we did not expect the regeneration of mankind from any direct action on those sentiments, but from the effect of educated intellect, enlightening the selfish feelings." And yet, at this period, Mill notices that he would now and then be powerfully moved by some elevated sentiments in poetry or biography, and that he had one or two distinct impressions that there was something nobler than the career of a sectarian and a partisan, even for objects so high as those of social and political reform. His "inauguration as an original and independent thinker" he dates at certain joint studies with a few others in logic and "analytic psychology," the basis of which was "Hartley on Man," to which his father's "Analysis of the Human Mind" was added. We notice that about this time he was brought into familiar and frequent contact with men of somewhat different training and associations, and of opposite ways of thinking,—with university men, and men of avowed Christian principles, like Thirlwall, Macaulay, the late Bishop of Oxford, Edward and Henry Lytton Bulwer.

It was then that he underwent what he calls "a crisis in his mental history," and advanced "one stage onward." From 1821, at the age of seventeen to eighteen and onward, he had a definite "object in life,—to be a reformer of the world." "My conception of my own happiness was entirely identified with this object." This theory of life animated and contented him for a few years. "But the time came when he was awakened from this as from a dream." It was in

the autumn of 1826. He was in a dull state of nerves, in a generally depressed state, — “the state, I should think, in which converts to Methodism usually are when smitten by their first ‘conviction of sin.’” We hardly know what induced Mr. Mill to add this, — whether by way of condescension to his less illuminated Methodist brethren, or whether he deemed it an extraordinary stroke of philosophical sagacity, or whether he enjoyed what occurred to him as the humor of the conceit. Possibly his Methodist brethren might refer the suggestion to the Devil; but, if so, he must have assumed the guise of a mildly flavored Mephistopheles. The experience was no joke, however humorous it might seem in the retrospect. Mill was led to ask himself (in all seriousness, as many before him had done), “Suppose that all your aims in life should be realized, and all human institutions and opinions should be perfected, would this make you happy?” An irrepressible self-consciousness distinctly answered, “No.” “At this my heart sank within me: the whole foundation on which my life was constructed fell down.” This cloud hung over him for months. Books and studies could not dissipate it. The old ideals no longer satisfied or stimulated him. He felt that his love for mankind had worn itself out. He had no friend to whom he dared or cared to unbosom himself. Least of all could he go to his father, to whom the revelation would have been a disappointment and a reproach, as it would have demonstrated that his theory of education had proved a failure. In accounting for the defects of his culture, as thus demonstrated, the son employs the technical phraseology of the associational psychology. “His associations had not been trained rightly. They should have been conformed to the laws of nature and the reality of things,

and thus have been placed beyond the reach of possible dislocation. Moreover, the habit of analysis to which he had been subjected was itself unfavorable to the formation of the strongest and most satisfying associations." But the most skilful diagnosis of a disease, even though it is expressed in the most philosophical terminology, is not a cure. So it proved with Mr. Mill. The disease to him was sharp and threatening. However fantastic it might have appeared to his unsentimental associates, it was a fearful reality to himself, so serious as to make existence a burden almost insupportable. No language, he thought, was better adapted to express it than the language which he quotes from Coleridge: "Hope without an object cannot live." No words were oftener in his mind than those words of Macbeth to his physician: "Canst thou not minister to a mind diseased, pluck from the memory a rooted sorrow?" A good Methodist would have suggested that the words which would have phrased his feelings most perfectly were, "I thirst for God, for the living God." At last the remedy came, and as suddenly as a Methodist "conversion." But it came by no diagnosis of the causes of the disease, or analysis of the associations, but by the development of what the men of his school would call a sudden gush of "sentimentalism." This personified metaphysician was reading Marmontel's memoirs, and lighted on a story in which, at his father's death, this boy heroically takes up the burden of the family's sorrows and needs. "A vivid conception of the scene and its feelings came on me, and I was moved to tears. From this moment my burden grew lighter." There is nothing strange in such an experience. Coleridge makes the Ancient Mariner relate, how, as he gazed upon the living creatures about him, he broke out with the words: —

"Oh, happy living things ! no tongue
 Their beauty might declare :
 A spring of love gushed from my heart
 And I blessed them unaware :
 Sure my kind saint took pity on me
 And I blessed them unaware.
The self-same moment I could pray."

Mr. Mill did not proceed quite so far as this. The more is the pity. But he did make one step forward. He adopted an entirely new theory of life, and sought to turn it into practice. First he learned to forget himself, which he had never done before ; i.e., he endeavored to lay aside the self-consciousness which his unnatural training had bred. He schooled himself to think little of his own happiness as the aim and end of his life, but to fix his thoughts and care upon his fellow-men, and to forget himself in his love for them. He did not abandon what, in a certain sense, may be called the utilitarian theory of the New Testament ; but he attained some rude notion of the New-Testament theory of self-sacrifice and self-forgetfulness. We would not intimate that he ever condescended to acknowledge any obligation to such a book, or to the Master of its wisdom ! Second, which at first thought seems inconsistent with his new aims, he began to cultivate directly what he calls "the passive susceptibilities." "The cultivation of the feelings became one of the cardinal points of my ethical and philosophical creed." The instruments of this new branch of self-culture were not truth, but poetry and art. He began to find a meaning in what he had heard of the importance of both. Music first moved him. It is characteristic of this calculating logician, that at first he was seriously disturbed by the possible prospect that all the possible combinations of tones in melody and harmony should be exhausted, and that music would at

some time have exhausted its resources as an instrument of culture and enjoyment ; and what should he do then ? Akin to this was the thought, that when all human institutions should be perfected, and every human being should be perfectly trained by the proper adjustment of circumstances, there would be nothing left for a professed reformer to live for. To this suggestion poetry brought relief, and, singularly enough, the poetry of Wordsworth. This opened to him the culture of his feelings as an object worthy to be pursued, and the possibility of constant occupation and development, and of exhaustless delight in the enjoyment of nature, as his sensibility should be increasingly refined.

In other words, this man, who had been so carefully trained to believe only in the power of the intellect and in the omnipotent force of right opinions and reformed institutions, was now converted to the doctrine that the feelings are the springs of action and the sources of happiness. He became what some men call a "sentimentalist." It is not wonderful that he did not like to tell his father and his fellow-reformers, and that, all his life after, he sought to make trimming compromises between his old and new extremes of doctrine. Nature had her revenge upon him. At first he had relied on intellectual achievement as an end, dignified, indeed, by a certain dim recognition of human perfectibility, vaguely conceived, and scarcely half understood. But this perfection was limited to the actions, instead of having its root in the character, as controlled by unselfish love. He next conceived of this perfection as consisting in the prevalence of the higher sentiments, as the product of culture, and the result of better associations. His second position was defective ; because, under the fatalistic theory to which he still adhered, there is no possible provision for either individuality of char-

acter, or virtue. Moreover, for the culture of those higher sentiments, he rested in poetry and art, when he should have proceeded to religion. In other words, he began and ended with the imagination, and overlooked the truth, that, unless the imagination in poetry and art suggest an ideal of truth which is diviner than man, it cannot permanently control and cultivate the better sentiments. He failed to see, that, if the imagination is made a substitute for faith, it ceases effectually to purify and ennoble the feelings; and that the reason why poetry and art do so much for man is, that they prepare him for *the faith* in that something higher and better which is another name for the living God and whatever the existence of the living God involves. "They that destroy God destroy man's nobility," says an English authority more trustworthy than either Mill the father, with his dry and hard intellectualism, or Mill the son, newly converted to his inconsistent and compromising sentimentalism.

The new, and, in many respects, the better light which Mr. Mill had received led him to cultivate the society, and to read the writings, of new associates. He became somewhat intimate with Frederick Maurice and John Sterling, and others of the Coleridgian school. He read Coleridge and Goethe and Carlyle. "The influences of European, that is to say, Continental thought, and especially those of the re-action of the nineteenth century against the eighteenth, were now streaming in upon me." His new light also modified his political philosophy. Instead of believing, as he had done, that institutions could perfect men, and that all men were capable of receiving the same institutions, he now held, "that any general theory of politics supposes a previous theory of human progress. That is the same thing with a philosophy of history." But, un-

fortunately, his philosophy of history was to a large extent of the same type with that of St. Simon and Auguste Comte. His new views were still alloyed and rendered abortive by the associational psychology, which he never abandoned, and the atheism which he never outgrew, and the entire absence of any just conceptions of human freedom as the ground of human responsibility. His new discoveries did not lead him, he insists, to abandon any of his original principles, but to see them in fresh lights and with an enlarged significance. "For example, during the later returns of my dejection, the doctrines of what is called 'Philosophical Necessity' weighed on my existence like an incubus." Why it should do so he more than once intimates. The doctrines of freewill he saw to be inspiring and ennobling; the doctrine of fatalism to be depressing and enslaving. He contrived to relieve himself by what he thought a dexterous compromise, which he parades in his "*Logic*,"¹ as though it were an original discovery of the difference between fatalism and necessity, although it seems to us to be evasive and unsatisfactory. This discovery is certainly not a novelty, having been received in certain Calvinistic schools for more than a century and a half. The reader of Mill's miscellaneous writings will, by the light furnished in this account of the change in his opinions, easily explain his changing attitudes of thought in these papers, and his attempts to adjust and compromise his own views with those of men of opposite tendencies and principles. They will find an explanation of the timid and uncertain shuffling, which was in part or wholly concealed from himself by his singular and his perhaps unconscious dexterity in shifting alternately from the sharp and rigid nomenclature of the schools to

¹ *Logic*, bk. vi. chap. ii. § 3.

the indefinite and pliant language of common life. It is interesting, though a little saddening, to hear him acknowledge that his new position, in a certain sense, estranged him from his father's sympathies. The compromising son must inevitably have been unintelligible to the uncompromising father, even if their want of sympathy had concerned matters less fundamental.

At the age of twenty-five he made the last and most important experience of his life. He became acquainted with Mrs. Taylor, with whom he maintained an intimate friendship for twenty years, till after the death of her husband, when they were married. For this lady his adoration and love were unbounded. He insists that she lifted him up into higher experiences than he had previously known, that he received more from her intellect than he gave, and that her character became to him a constant inspiration. He avers that the most important of the treatises written after their acquaintance was perfected, were in reality more the products of her mind than of his own, and that when she died the overflowing spring of his new thoughts and new emotions was forever dried up. We cannot find space for the glowing description which he gives of her mind and character; nor can we make clear to ourselves at all times exactly what his words import. He definitely states, that, while her aims and expectations concerning the perfectibility of man and society surpassed his own, her judgments concerning the means of realizing these aims were more sagacious and cautious: in other words, she had a rare combination of womanly enthusiasm for the noblest and the largest objects, with womanly wit in her judgment of the means essential to attain them. It is unnecessary to trace in detail the changes which she effected in his opinions. Most of these changes were in the direction which they had already

begun to assume. In some respects she was less disposed to accommodate herself to the wisdom of past experience and the prejudices of unreasonable conventionalism than he, even in his most radical dreamings. He notes among her excellences "a complete emancipation from every kind of superstition, including that which attributes a pretended perfection to the order of nature and the universe." Alas that the Numa of our times did not find in his Egeria as believing and devout a spirit towards God as she was noble and loving towards man! In 1851 they were married: after seven years and a half she died; and his account of his life after this "most unexpected and bitter calamity" is as follows: "Since then I have sought for such alleviation as my state admitted of, by the mode of life which most enabled me to feel her still near me. I bought a cottage as close as possible to the place where she was buried, and there her daughter (my fellow-sufferer, and now my chief comfort) and I live constantly during a great portion of the year. My objects in life are solely those which were hers; my pursuits and occupations, those in which she shared or sympathized, and which are indissolubly associated with her. *Her memory is to me a religion*; and her approbation, the standard by which, summing up as it does all worthiness, I endeavor to regulate my life."

Words like these must have been sincere. Whatever we may think of the reasonableness of Mr. Mill's impassioned affection for his wife, we cannot doubt that he felt all that he expresses of what she had been to him while she lived, and what she became to him after she had died.

His acquaintance with this lady gives the character to the third stage of his mental and moral history. In the first stage he was engrossed with intellectual activi-

ties. In the second he was awakened to the world of imaginative sentiment. In the third he was controlled by strong personal affection. Had a fourth supervened, it should have supplemented and rounded out what was wanting in each and all the others: it should have given him a religion indeed. That idealizing sentiment which properly leads to and belongs to the uncreated and self-existent, he had already accepted. Love for a person whom he esteemed immeasurably his superior, especially in spiritual excellence, he had joyfully acknowledged to be a necessity of his being and the regeneration of his life. Of the object of this love he used unwittingly the language of *devotees* and *saints*: "What I owe even intellectually to her is in its detail almost *infinite*." It remained for him to complete the three experiences of his practical life by the highest, to which the three appropriately conduct; viz., the intellect which discerns, the imagination which aspires, and the heart which loves. His early superficial and vulgar associations with religion, as sentimental, idealistic, and affectional, had been already surrendered. There remained nothing to be overcome except the hard and narrow prejudices of a lifelong sectarianism and the supposed requirements of his Manichean philosophy. But this Manichean philosophy is as truly incompatible with the existence of man's personal individuality and his social responsibility as it is with faith in a personal God.

There are two or three phrases in the passage already cited, which are touchingly suggestive. "Since then, I have sought for such alleviation as my state of life admitted, by the mode of life most enabling me to *feel her still near me*." "Her *memory* is to me a religion; and her *approbation*, the standard by which I endeavor to regulate my life." These words express no belief

even in the possible immortality of the departed whom he loved. This being held to be absurd, our philosopher of hard facts as attested by the actual experiences of sense becomes the slave and sport of the make-beliefs of tenacious associations as they play fast and loose with inevitable realities. He takes refuge in the most unsubstantial idealism. He essays to *feel* that he is near her, and he wakes to the solid fact that he *believes* and *knows* that she is *nowhere*. Having no other religion, because all religion is superstition, "her memory is to him a religion." Had this philosopher, in the extremity of his grief, erected an altar near her tomb, had he decorated it with flowers, and recited before it her praises, and implored the guidance of her departed spirit to regulate his life, this superstition might be pardoned. Events more strange than these have happened, and events such as these would only be additional examples of how near akin atheism is to superstition. Mr. Mill's friends have reason to be thankful that he did not enact the sorry farce of Comte with his Clotilde de Vaux.

It does not come within our plan to follow Mr. Mill through the history of his intellectual activities. We have to do chiefly with his personal and practical life. We shall not here attempt even a general estimate of his intellectual power or his intellectual achievements. To do this would require an elaborate criticism of his principal works and of his philosophical system. But we may be allowed to say, that the perusal of his autobiography does not leave the impression that Mr. Mill was distinguished for sound judgment as a thinker, or enlightened common sense as a man. His estimates of principles and of men strike us as uniformly pedantic and bookish, rather than penetrating or liberal. Occasionally they seem to us weak and whimsical, as when

he ranks Maurice higher than Coleridge in every particular except as a poet, thinks Carlyle's chief power is the poetic, and studiously depreciates Sir William Hamilton. We find evidence of a similar weakness of judgment in all his writings ; but, we think, in none of them does he betray such marked and one-sided weakness as in this. The value of many of his treatises is unquestioned. Many readers who dissent from the characteristic principles of his philosophy are forward to acknowledge that his writings are almost as valuable to the world for their conspicuous failures as for their acknowledged excellences. The transparent *naïveté* of a man who is so often blind to the obvious weaknesses of his inconsistencies and concessions sometimes moves the pity of his critics, and disarms the severity of the most determined antagonist.

No defects of this kind should, however, lead any right-minded man to withhold from Mr. Mill the honor which he merits from all lovers of justice and freedom for the eminent services which he has rendered in the cause of judicial and legislative reform. It is humiliating to consider that the nation which boasts itself so proudly of being by eminence a Christian kingdom should have not only tolerated, but defended, such fearful abuses in its law-courts and its parliaments, and for so long, and at last have imposed the hard and ungrateful work of effectually moving for their reform upon a small company of speculative atheists. It is shocking to be obliged to concede that the English Church should have tolerated within its precincts, and sheltered beneath its altars, such noisome masses of evil as to give so fair a pretext for the charges of these assailants, that its faith and worship were hollow and demoralizing shams. We may not forget the services to public and institutional morality which were ren-

dered by these determined rejecters of the faith on which all public morality must stand, and by which it must be enforced. We can never forget that John Stuart Mill was the bold and fast friend of this country and its free spirit in its trying conflict with slavery. It was inevitable that his services and sympathies for human freedom and human progress should dispose many lovers of freedom to regard his speculative and practical principles with a confidence which their independent merits would never have commanded.

We cannot regret that this autobiography should reveal the man in his weakness, as well as in his strength. It cannot fail to move our sympathy for the tone of sadness which pervades its narrative from the beginning to the end. And yet we cannot but inquire, Why it should be so sad? Mr. Mill's life was in most respects eminently fortunate. The discipline of his childhood was severe and exacting; but he bore it with a cheerful spirit, for he was animated by the consciousness of growing intellectual power. Though his companions were few, yet their sympathy was complete, and they hailed his promise with inspiring delight. His public career was one of constant progress in the consciousness of increasing power and increasing reputation. The publicists of Great Britain, who had treated him with contemptuous neglect, first honored him with criticism, and then with deference, and finally with admiring sympathy. The universities, which in his youth had no words too biting for their jeers and their scorn, in his advancing years furnished many devoted adherents, not merely to his measures of reform, but to his speculative principles, in spite of their alleged and real incompatibility with any form of theism. His labors at the pen and in self-discipline were constant; yet he knew no pleasure so exhilarating as studies and labors like these.

But he was not satisfied. Sentimental benevolence and imaginative self-culture widened his mind, and softened and elevated his sensibilities. Human affection then took him up. He loved a woman who more than satisfied his ideal in her intellect, her temper, and her enthusiastic sympathy with his aims and labors and studies. But he gives no evidence that either his mind or his head ever attained to peace. He was without God by his own ostentatious confession. That he was without hope in the eminent sense of the word is confessed in every line of this life. After the removal of her who impersonated the best, if not all, of love which he ever enjoyed, he dwelt as near to her tomb as he could, that he might *feel* that she was near to him. Her memory was his religion, not the belief in her immortal existence. Her approbation was *the only standard* in the actual and ideal universe by which he sought to regulate his life, and yet this approbation was only a sentimental fiction.

We have already adverted to the saying of Mr. Mill, that many atheists of his acquaintance were the most religious of persons, having the advantage, as he contends, of forming for themselves a perfect ideal of goodness, to which they could accord the profoundest reverence and the most devout affection. We do not care to dispute this opinion. We might concede that what he says in certain exceptional cases is possible. But it should never be forgotten, that these persons must have been trained in a community which is full of Christian theism, and have breathed from their infancy an atmosphere which is fragrant with the elements of faith and love for a personal and loving God. It may not be surprising that persons of brooding, speculative habits, or morbid sensitiveness to all dogmatic propositions or doubtful arguments concerning a personal God, and

especially when oppressed by the weight of evil in the universe, should flee to the sanctuary of their own idealizations, instead of the living presence of an Infinite Person, because they cannot grasp all the relations of existence by their own limited powers, or explain every event which happens in consistency with his boundless love.

This may be so; but Mr. Mill's experience testifies in many ways that the universe is darker, rather than brighter, to every soul which fails to believe in such an ideal as a living fact. Mr. Mill sitting by the grave of the wife, who, when alive, was his only animating ideal of perfection, and mourning that she is no longer a living presence, is a representative of many of those religious idealists who think to content themselves with imaginary objects of worship, to whom they strive "to feel that they are near." There are many such, we are constrained to believe, who mournfully, if unconsciously, cry out for the living God in the aspiration, if not in the words, "Oh that I knew where I might find Him!"

P.S.—Since the publication of Mr. Mill's autobiography, we have fuller notices of his father and himself in the two works by Professor Alexander Bain; viz., "James Mill, a Biography," and "John Stuart Mill, a Criticism, with Personal Recollections." (London: Longmans, Green, & Co. New York: Henry Holt, 1882.) These works give many interesting details of both father and son, all of which confirm the impressions made by the autobiography; and all the more as they are written in the spirit of faithful but uncritical admiration.

Some important matter, however, is furnished in "Memories of Old Friends, being Extracts from the Journals and Letters of Caroline Fox of Penjerick,

Cornwall, from 1835 to 1871. Edited by Horace N. Pym." (Philadelphia: J. B. Lippincott & Co., 1882.) In this work Mr. Mill is often noticed as having been a frequent visitant of Miss Fox, and an occasional correspondent, about the time of the death of his brother, and not long after that change in his intellectual position, and to some extent in his associates, which he somewhat vaguely and inconsistently describes and records. It would seem, from his letters and conversations, as recorded in this work, that he came into a much more definite and close sympathy with Christian truth and Christian emotions than he was afterwards willing to acknowledge in his own deliberate record of his psychological history and his religious opinions. Every thing that Miss Fox records of him is eminently honorable to his memory. There are some less amiable and creditable notices of Mill in his youth, which the curious may find in "Wandering Recollections of a Somewhat Busy Life: an Autobiography by John Neal." (Boston: Roberts & Brothers, 1869.)

JULY, 1882.

V.

*JOHN STUART MILL AS A PHILOSOPHER.*¹

JOHN STUART MILL² has been very frequently brought before the public for criticism. Every book which he has written has been made the occasion for a fresh discussion of some of his opinions, either in the way of attack or defence. It would seem, therefore, to be almost superfluous to make him the subject of an additional essay. But, now that he has ceased to live, it cannot be improper to attempt in a general way some estimate of his claims as a philosopher, especially since his autobiography has furnished ample material of great importance in enabling us more correctly to estimate his claims.

This autobiography has a twofold interest; as it reveals to us Stuart Mill the man, and Stuart Mill the philosopher. Either one of these aspects of a person so significant in his influence would suffice for an extended discussion. We select the last as our theme. It is with Stuart Mill the philosopher that we propose to concern ourselves; leaving Stuart Mill the man entirely unconsidered, except so far as the contemplation of the man may help us to understand the philosopher. The topic is of no inferior interest in view of the high place in which Mr. Mill is held, to a certain extent not undeservedly, by a large number of agile and confident thinkers, and especially in view of the strong opposi-

¹ The International Review, May, 1874.

² Autobiography of John Stuart Mill. Henry Holt & Co., New York.

tion which is felt to his opinions and his modes of philosophizing by very many persons whose objections are entitled to a respectful consideration.

The training of Mill was in many respects peculiar. What it was has been recorded by himself, with rare minuteness and fidelity; and the record enables us the better to understand some of the peculiarities of the philosopher who was formed by it. He was subjected from his earliest years to a severe and constant discipline, under the watchful eye and the rigid hand of a father who seems to have manifested his fatherly affection less in the ways of indulgence and sympathy, than in those of intellectual excitement and exaction. His education began with Greek and Logic. Logic was taught very rigidly, but for practical ends, with the express and seemingly the sole design to train him to become a clear and coherent expounder and defender of his father's opinions. Although Mill the father had very narrow and inadequate conceptions of the importance of logic as a preparation and discipline for the investigation of truth, he had a strong and fervent faith in the necessity of its gymnastic for an advocate and a partisan. The truths in which he had any faith or zeal were also very scanty in number and somewhat narrow in their range. He believed very positively in matter and very hesitatingly in spirit. He believed very strongly in man and very feebly in God; very earnestly in human government and social organization, and very faintly in a Divine Providence. He had a faith in democratic institutions which was almost fanatical, and a hatred of every species of theocracy, which was more than fanatical in its positiveness and acrimony. The perfectibility of man through an enlightened self-interest — by means of popular government and universal education, especially in the elements

of political economy and in the Malthusian doctrines of population — was the chief article of his philosophical creed. To defend and propagate this creed was predestined by the father as the life-work of the son ; and it was to make him dexterous and skilful in attack and defence that the father trained the son, with a more than Spartan rigor, in the school of logical and classical analysis. The effect of this training remained with him through life, and gave a marked character to all his intellectual activities and achievements. He became a clear and patient analyst, finding supreme delight in precise statements and in coherent and well-sustained deductions. Refined distinctions and attenuated generalizations became the atmosphere of his intellectual life. He was so thoroughly schooled to patience in labor as to be attracted rather than repelled by any investigation or discussion which seemed to require a long-continued application of the powers of abstract thinking.

But with all these excellent habits he was not trained to be a philosopher. His father had apparently little interest and less faith in philosophy in the largest sense of the word. Mr. James Mill was an anti-Theist, — not so much from intellectual conviction as from passionate dislike to all questions which suggest those intellectual or scientific relations which lead to God. He was a half-Manichean ; which, for a mind trained like his, was simply to accept the first makeshift by which to dispose of any questionings or thoughts which might emerge above the horizon of his political and economic dogmas. He eminently exemplified the truth that Atheism necessarily narrows the intellect, and shuts it down to a limited sphere of thought and inquiry. He had no metaphysics proper, because he steadfastly refused to ask the questions which involve a fundamental

philosophy. The necessity of certain assumptions which cannot themselves be demonstrated from truths more fundamental, nor be derived by induction from experiment or observation, — a necessity which Plato reiterated in imaginative myths, and Aristotle asserted in unmistakable and irrefutable propositions, — Mr. James Mill never acknowledged; but, severely logical as he was, he either failed to follow any questionings which would conduct to such a goal, or disposed of all such suggestions with positive and contemptuous dogmatism.

But it is not easy for a man who thinks at all to dispense with some semblance of, or substitute for, metaphysical philosophy; and the semblance with which Mr. James Mill contented himself, was the doctrine taught in Hartley's "*Essay on Man*." This treatise had been received by him with almost implicit deference, and Hartley and Hobbes became the supreme authorities in his court of last resort. From Hartley he derived two dogmas, which characterized the psychology, and in a sense constituted the whole of the metaphysics, of both father and son. These dogmas were, that nearly all the higher processes of the intellect are capable of being resolved into the so-called association of ideas, and that the law of necessity holds good of the phenomena of spirit as truly as of the phenomena of matter. Neither the father nor the son was a materialist in form or avowal; but they both never ceased to regard and treat the human soul as in all its processes entirely passive, — alike in its reception of its impressions from without and in the revival of these impressions from within by memory and imagination, as eminently in those interpretations of truth which are gained by generalization and reasoning. The fatal tendency imparted to English philosophy by Locke, through his one-sided sympathy

with the awakening physics of his times, which was feebly counterpoised by his positive recognition of spiritual phenomena and relations, had taken exclusive possession of Hume and Hartley. Through them it passed on to both the Mills, by whom it has been fixed more firmly than ever in the unconscious and the acknowledged methods of many able and influential schools of the present generation. It is true that James Mill, in his "*Analysis of the Human Mind*," in some important particulars breaks from entire consistency with his own fundamental principles, and that Stuart Mill in his "*Logic*," his "*Criticism of Hamilton's Philosophy*," and his "*Annotations*" to the "*Analysis*" of his father, steps more widely aside from the narrow path to which these principles should have rigorously held him; but it is also true that neither the father nor the son ever learned to regard the soul as exempt from many of the methods and laws to which matter is subject. While neither of them was an avowed materialist, they never proceeded to a formal disavowal or protest against materialism, and almost uniformly treated and reasoned about the soul as though it belonged entirely to the realm of matter.

The training of Mill was also singularly isolated, even in its intellectual influences. He seems to have had no companionship except with his father and the younger members of his family. But his father was little more to him than the stimulating and overshadowing taskmaster, and over his brothers and sisters he was very early established as a monitor and teacher. Even his walks were occupied in study and recital, uniformly under his father's eye. From the first to the last he had little or no companionship with youths of his own age. The society which he saw in the household was limited as to numbers, and was singularly limited as to

its quality, consisting exclusively of men of his father's way of thinking, — hard-headed Radicals, who in those days were ostracised as quixotic or dangerous members of society; men who, in the judgment of the average Englishman, were regarded as fit candidates for a lunatic asylum or a prison, and who revenged themselves by cherishing a hearty if not a prejudiced contempt for every institution which was fixed and every person who was respectable, i.e., aristocratic. The English Constitution and the English Church, which most Englishmen are taught to regard as in some sense permanent and sacred, were uniformly spoken of with ridicule and hatred. Mr. Mill even tells us, that, from his earliest childhood, the religion of his countrymen was viewed by him with pity and wonder. A youth so educated must inevitably have contracted some very unfortunate intellectual habits. We do not care to discuss the question whether Mr. Mill was self-conceited in the special sense of the term. He contends that he never was, although he acknowledges that he was considered especially offensive for forwardness and self-complacence. But his incapacity to conceive self-conceit to have been possible of himself, is one of many evidences of the singular inaptitude to understand himself as he must have appeared to others, which he displays in all his writings, and which can only be accounted for by some original obtuseness of feeling, or the extreme isolation of his childhood. Had he been forced by the rude sports and the earnest contests of school-boy life to confront his own pretensions with the judgments of his peers, and to measure his intellectual strength in debate and conference, he never could have contracted that quiet but persistent dogmatism which is so conspicuous in all his writings, — a dogmatism which is redeemed by no absorbing enthusiasm which might lead him to forget

himself in his interest for his cause, and which seems never to have been shaken by the slightest suspicion that his self-complacence was not fully justified.

The peculiar *régime* to which Mill was subjected would have awakened some antagonism in a less passive and compliant nature. But his was a mind which was singularly pliant in receiving impressions from others, and equally persistent in retaining them; plastic in the hands of others, but unchangeable when left to itself. His very dependence upon others fixed him in a more dogmatic and determined devotion to the early and oft-repeated inculcations of his early training. He was not so unimpressible, indeed, as not occasionally to feel the force of counter arguments and influences. But Mill's persistent obstinacy would usually enable him to fall back upon the positions which were earliest received and had been deeply ingrained, and to contrive some plausible adjustment between what he was constrained in some sense to recognize and what he was determined not to abandon. No philosopher of modern times can be named who claimed to be so progressive and yet made so little progress, who seemed utterly unable to know when he was fairly refuted,—who would contribute so freely, because so unconsciously, the materials for the exposure of his own inconsistency with himself, and yet was so entirely incapable of looking at a subject from the stand-point of another mind. He seems to have lacked in great measure the capacity to be suspicious of his own positions, or to act the part of a critic upon himself. While he had seen enough of men and read enough in books to be fully alive to the importance of candor, he lacked altogether the spirit of reverence for the gifted minds of the past. His judgments of those of his contemporaries from whom he differed were almost wholly wanting in affectionate

sympathy or reverential appreciation. His most honest attempts to be candid were often marred by some misconception of an antagonist's meaning, or some perversion of his fundamental principles.

But the most signal and comprehensive defect in the intellectual character of Mr. Mill was his lack of common sense, or his almost complete incapacity to judge of common things and common events, and their relations to philosophic principles. This was not more apparent in his behavior in respect to some of the most obvious relations of human society, and in his failure as a practical statesman, than it was in his discussion of fundamental truths in political and metaphysical philosophy. This defect is not surprising in view of his early training, and the subsequent course of his life. No boy, not possessed of original obtuseness of judgment or sensibility, — of one or both, — would have tamely submitted to so complete an isolation from the rest of mankind. No boy, who would allow himself to be passively moulded by it, could possibly escape from one-sided views of man, of nature, and of society, or fail to accept the fancies and conclusions of bookish or secluded theorists in place of those corrected judgments which the experience of life and of men alone can furnish. The lack of common sense is usually accompanied by the incapacity for humor. Scarcely a trace of humor is to be discerned in all of Mr. Mill's writings. Some of his essays and critiques might have furnished occasions for now and then a play of pleasantry or an outburst of merriment, but into either of these moods Mr. Mill never relaxed. A solemn gravity seems to have taken complete possession of his being. A persistent positiveness bears him forward in an even and monotonous course of thought and diction. A mild but determined dogmatism gives impressiveness

to his utterances. The self-confidence with which he shuns an issue which seems about to be forced upon him, the calm unconsciousness with which he propounds opinions which are contradictory to one another or to common experience, and the dexterous plausibility with which he imposes on his reader and on himself, are all veiled with a solemn air of supreme self-satisfaction which forbids even a smile. Dissent and controversy are hushed into silence before a self-complacency so complete. Levity cannot find it in its heart rudely to intrude upon so staid and solemn a presence.

It scarcely need be added, that these peculiarities were intensified by the flattery which was accorded to Mr. Mill during the whole of his intellectual career. He was predestined from his infancy to labors for reform: he was very early recognized for acquisitions and ability as the foremost young man in the then rising coterie of English Radicals. His earliest essays in debate and through the press were read with attention, and abundantly, if not excessively, praised. His party grew in numbers and in recognized influence. The books which he published were laboriously and faithfully prepared: every one of them met a public desire and necessity, and, if severely criticised, was lavishly flattered. After he found himself famous, he was treated with deference and consideration by the parties and men who dissented most decidedly from his principles. He forced into respect for his writings the dons of the universities, the parsons of the church, and the professors of the schools of science, and was at last made rector of one of the oldest of the universities of Scotland, in which the old logic and the old metaphysics and the old theology had been long and deeply rooted. It is not surprising, that, when he gave himself deliberately to the work of criticising and refuting the

metaphysician who had been foremost in reputation in Great Britain, he should have assumed airs which his own well-schooled habits of decorum did not altogether conceal, and should have presumed not a little upon his own inattention or that of the public to the defects of his own philosophical system, in which he had learned by the deference of others to place such implicit and presumptuous confidence.

Two peculiarities of Mr. Mill's intellectual activities contributed prominently to his popularity and influence. The one was, that he devoted himself very largely to the discussion of subjects of practical and present interest. The other, that he as uniformly aimed to discuss them in a style which could be readily apprehended and followed by intelligent men, and most sedulously avoided the language and methods of the schools. To both these habits he was doubtless trained by his early and long-continued ambition to become a leader of opinion in matters of political and social reform. Though from very early life he was thoroughly drilled in the methods of formal logic, and accustomed to deal with the conceptions of political and social science, his interest in these sciences was prevailingly partisan. His chief ambition for many years, was to be a leader in actual reforms, and to become in the best sense an accomplished and effective tribune of the people. He studied the science of government, that he might apply it to the re-organization of the English system. He devoted himself to Political Economy, that he might increase and equalize the public wealth. He wrote an extended "System of Logic," that he might illustrate the application of its principles, particularly those of induction, to the discoveries of physical science, and the theories of sociology. His criticism of Sir William Hamilton's Philosophy was incidental to the metaphysi-

cal and psychological discussions involved in his own "System of Logic;" but even this was conducted in the spirit of applied rather than of pure philosophy. Every one of these subjects, at the time when he treated it, was a topic of present and excited interest. The Reformers, with whom he was identified; the Radicals, whom he led; and the more temperate Progressives, with whom he co-operated,—were eager to read and ponder whatever he produced. The students of political and social science became more numerous, more eager, and more intelligently wakeful, with every decade of his life. The public events of every season, and the proposed financial measures of every session of Parliament, gave an increased zest to the public appetite for each fresh article of his upon any topic in political economy. By the time Mill was ready to issue his great work on this subject, all Great Britain and America were eager to read it. The splendid career of discovery in every branch of modern physics, which has so distinguished the present century, not only made it inevitable that some writer should treat of the logic of induction, but had already prepared the minds of an army of keen-sighted investigators to receive with applause and honor the first writer who should propose to meet and to solve the problems involved. Sir William Hamilton was at the height of his reputation, and his name was surrounded by the halo of reverence with which it was invested by his recent death, when Mill found it necessary to subject Hamilton's philosophy to a bold criticism, if he would save his own system from threatened dishonor. Not a single one of the greater or lesser writings of Mill was untimely in the sense of not meeting a present popular demand, which in many cases was a permanent demand, and made more permanent and more imperative by the excitement of the supply.

Not only did Mr. Mill uniformly write upon topics of present interest, but he uniformly preferred the language of common life to the language of the schools. His popularity and influence are largely owing to the circumstance, that it was a leading aim with him to make scientific distinctions perfectly intelligible to any man of common intelligence who would lend him patient attention. The liability to diffuseness and repetition, nay, even to tediousness and commonplace, in nowise deterred him from expanding his discussions to as great a length as might be necessary to secure his reader against the possibility of mistake or of confusion. His diction is uniformly clear in form, and apparently coherent and logical in its connections. His style, it must be confessed, often lacks the *verve* which comes from the highest kind of enthusiasm. Not infrequently it fails even to hold the attention, and it occasionally requires an earnest and somewhat painful effort on the part of the reader. The most serious defect, however, of this popular and apparently lucid style is, that it leads his confiding readers to overlook his not infrequent deficiencies in thoroughness and consistency. Whatever readers and critics may say of the awkwardness of a precise terminology, and however much they may extol those books of philosophy which are written in the language of common life, it will still remain true, that an exact terminology, even if it be scholastic, has the advantage of holding both reader and writer to close and consistent thinking. A philosophical terminology which is borrowed from common life, and which is used with the freedom of common speech, may at one time signify one thing and at another time another; and the writer who does not exactly know in what sense he uses a term in one connection, may use it in another sense altogether unconsciously; or if he is pressed with one of

his own interpretations, or the inferences which it involves, he may dexterously escape by falling back at his convenience upon the larger or the more limited import, the popular or the scientific. The so-called clear and simple language of common usage may readily become turbid and ambiguous at the convenience or necessity of such a writer. John Stuart Mill would be called, by many literary critics, one of the most transparent and consistent of English philosophical writers. We have no occasion to deny that this may be true in the easy passages of philosophy, — those places where easy thinking allows easy writing and easy reading, — but we do not find it true of Mr. Mill when he is pressed by any special difficulty. In such circumstances he is often eminently unclear, even to himself, and eminently evasive and inconsistent in answering or criticising others. We believe this should to a large extent be ascribed to his use of a popular instead of a philosophical diction, and to his affectation of ease and fluency in the elucidation of distinctions which are in their nature neither easy to be grasped nor to be held by the negligent or the untrained mind.

But Mill's habit of writing for the popular ear and in popular language wrought its worst consequence when it led him to abandon the distinctions which he had himself laboriously set up, and to play hide and seek with his own fundamental positions, by appealing to some well-known fact or belief of common sense and common speech, and thus by a dexterous *coup de main* to relieve his theories from the difficulties and inconsistencies to which they were fairly exposed. It was a favorite trick, which he often played off upon himself, first to adopt positions which offended common sense and true science, and, when he was held to logical consistency, to fall back for relief upon the very facts of

common sense which his philosophy had set at naught. Even when his attention was called to this inconsistency and apparent self-deception, he was very slow to be convinced, and often seems utterly insensible to the force of what seemed to others a conclusive demonstration that he was playing fast and loose with his own principles.

One of the most striking examples of the ease with which he could thus impose upon himself by shifting from scholastic to popular language is found in the work which is at once his last and his most elaborate contribution to speculative research; viz., his "*Examination of Sir William Hamilton's Philosophy.*" Chapters xi. and xii. of this work are devoted to an explanation of the belief in an external world by what Mill calls the psychological as contrasted with the intuitive theory; i.e., by the data or postulates of the associational metaphysics. He states these postulates thus: first, the human mind is capable of expectation; second, by the laws of association, similar and contiguous phenomena tend to be thought of together; third, associations by repetition become so rapid as to be indissoluble; fourth, when an association has thus become inseparable, "the facts or phenomena answering to these ideas come at last to seem inseparable in existence." From these postulates he maintains that there are associations naturally generated by the order of our associations and of our reminiscences, which generate the belief of the external world, and cause it to be regarded as an intuition.

With this challenge he proceeds to define what we mean when we say that the objects we perceive "are external to us and not a part of our thoughts:" — "we mean that something exists when we are not thinking of it, and did exist before we thought of it." This, he

says, is synonymous with perdurability or permanence. But permanence is simply "a form impressed by the known laws of association" upon a group or series of sensations which are merely contingent. This is accomplished thus: When I see a piece of white paper in a room, and, *going out of the room*, still believe that the paper exists, what I believe is, simply, that *when I should return* I should experience the same sensations as before, and that this would happen should I return at any moment." We have, then, first, a belief in the possibility, under certain conditions, of the recurrence of certain sensations, viz., those which are treated by Mill as the equivalent of what is commonly known as white paper; and, next, a belief in the permanent possibility of their recurrence. This is the first step towards the explanation of the belief that white paper is a *non ego*; i.e., is external. We *posit* as the result of the first movement of the associational process, "a permanent possibility of certain sensations." As we stop here for an instant to contemplate what we have gained and the process by which we gained it, we find, that, with the postulates furnished at the outset, nothing is provided for but an expectation that certain sensations will occur in the order in which they have occurred before. Mill would have been more true to his own theory if, instead of calling white paper a "permanent possibility of sensations," he had called it a "permanent expectableness of sensations," or "a group, i.e., a series, of permanently expectable sensations." He should also have added, in order to exemplify what and only what his data provided for, a series of sensations expectable on the ground of frequent and rapid repetition. Mr. Mill does neither of these things; but, leaving his data and the application of them entirely unnoticed, he adopts the language of common life. He talks about "going

into another room," and says, "when I again place myself in the same circumstances in which I had those sensations; that is, when I go again into the room." One would think, that, if he believed in his own theory as needing only to be stated in order to be self-evidencing, he would adhere as closely as possible to the conceptions and data which the theory itself supplies. But this, Mr. Mill is careful not to do, we suppose unconsciously: for, when charged with resorting to such language because it suggests ideas and beliefs which his theory would not supply, he replies, "it was competent for me to state those facts in the language which was not only the most intelligible, but, to the minds I was addressing, *the truest*;" being utterly unconscious of the irony which he played off upon himself in calling popular language "*the truest*."

Had Mill been entirely "*true*" to his own theory, instead of "going into and returning from another room," he would have said, after experiencing a series of varying sensations, I should permanently expect to meet another series; viz., those commonly called white paper. But language like this would never give an external world. It would forever shut us up to subjective sensations. The grateful substitution of such phrases as "going into another room" and "white paper" ushers the theorist and his readers at once into the real world, from which the subjective experience of recurring and often-repeated sensations would have forever shut them off.

One word in respect to the phrase "possibility of sensations," adopted by Mill as the equivalent of the external thing commonly called "white paper." If Mr. Mill's school is distinguished for any excellence, it is for its protest against the danger of *using abstracta* as real things. And yet, in the hands of this intense posi-

tivist and nominalist, the thing "white paper" is translated into *the abstraction* "a permanent possibility of sensations." This is not all. *Expectableness* of sensations as a term is as abstract as *possibility*, but not so convenient "to palter with us in double sense," for the obvious reason, that, whereas "expectableness of sensations" would represent both the sensations and their relation to the mind as wholly subjective, "a permanent possibility of sensations" suggests more positively the operation of a force "external to ourselves and not a part of our thoughts," and by the associations inseparably connected with the very phrase. "Possibility," moreover, admits, if it does not require, the relation of causation, which Mill in the terms of his philosophy should resolve into a time-relation; although, for reasons of his own, he greatly prefers and constantly avails himself of those honest and *truer* words of common life, *cause* and *sensation*. "The possibility of sensations" is a phrase appropriate only to the extreme idealists; and yet it seems to satisfy the utmost needs of this extreme positivist, whose philosophy in most of its affinities is closely allied to materialism. It reminds us of the sonorous language of Johnson when seeking a purchaser for Mr. Thrane's brewery: "We are not here to sell a parcel of boilers and vats, but the *potentiality* of growing rich beyond the dreams of avarice."

But let us follow Mr. Mill. When we come back to the white paper, i.e., to "the permanent possibility of certain sensations," we ordinarily experience only one or two of the group, of which all are possible; hence this group is considered as permanent, not merely in contrast with "our bodily presence," — a convenient word, but not over-philosophical, — but in contrast with any temporary sensations which we may happen in fact to

experience from it. The series of permanent possibilities thus conceived, is "the idea of substance or matter as distinguished from sensation." We submit, that, if the conceptions and definitions of the associational psychology are adhered to, we should never reach the idea of matter at all, as distinguished from sensations. We should develop only the contrast between a group of sensations, say *ten*, conceived as permanently possible, contrasted with one conceived as actual, or more frequently experienced than the rest; but we should not and could not proceed a step beyond the world of subjective sensations. The plausibility of Mr. Mill's explanation arises from the ambiguity of the terms which he takes from common life; viz., matter and substance, "bodily presence," etc., as contrasted with subjective sensations.

Mr. Mill completes and clinches his synthesis thus: we cannot doubt that there is an external world, as soon as we find that these possibilities of sensation "belong as much to other human or sentient beings as to ourselves." "This puts the final seal to our conception of the groups of possibilities as the fundamental reality in nature." In this climax of his argument Mr. Mill altogether forgets the fundamental postulates of his theory. He does not stay to explain how the associational principles provide for the belief that *other minds exist*. Forgetting his own philosophy, he resorts to common sense. He postulates other minds, in which a belief is not set down among the associational data, and infers, that if other minds have learned under similar conditions with ourselves to expect the same possibilities with ourselves, therefore we have the conception and belief of an external world. This may be conceded; but by what authority or through what application of the associational postulates we come to the

belief in other minds, Mr. Mill does not acknowledge any obligation to show.

It is very easy thus to drop from the thin atmosphere of attenuated abstractions, and indulge for a moment in the plain language of common life. The reader welcomes the familiar terms and arguments; the author indulges him for a moment; but little does the reader suspect that the author is enabled in this way to smuggle in some missing link of thought which a rigid adherence to the terms and data of his theory would never have supplied, or to insinuate an argument which a strictly logical procedure could never have derived.

It is also observable, that, in Mill's analysis of the conception of an external world, he makes no mention at all of space-relations; and yet the absence of this most important element of the objective world is scarcely missed by writer or reader, forasmuch as the terms of common life so readily supply and suggest them.

We contend that it is not unfair to say, that, by this interchange of common and technical terminology, Mr. Mill contrives to muddle almost every subject which he essays to treat with philosophical exactness. It is no paradox to say, that when he seems to be the most clear and convincing, and because his terms are familiar and his illustrations are easily followed, he is the most emphatically confusing and disappointing. We need only contrast him with Berkeley to be sensible of these marked defects. Berkeley is not especially technical in his language; but he is never afraid to adhere to his own positions, or to face them in all their consequences. He moves with a steady and an onward tread. He derives from his postulates only those conclusions which their import warrants, but he fearlessly applies them in all their legitimate consequences. Whether you agree with him or dissent from him, you cannot possibly mistake his

meaning. You not only know what he holds, but you know why he holds it ; for his reasons follow one another in a close lock-step, of which every foot-fall is linked with every other. So far as mere language is concerned, Mill appears to be as simple and as clear as Berkeley. His freer use of common terms seems to give a special intelligibleness to his diction. But, when you study his diction as a revealer of thought, you find that his definitions are neither lucid nor exact, that his terms are not used in a uniform import, and that neither his analyses are exact, nor his deductions rigid. The clearness is superficial, and the logical coherence is only apparent. We venture to add, that most of the popular writers of the modern English school who sympathize with Mill's philosophy are open to similiar criticism. They affect clearness. They abound in illustrations from common life. Some of them are masters of the art of exposition. They claim to be eminently exact. It is possible they are exact so long as they confine themselves to their special science or art. But when they proceed to the metaphysics of induction or evolution, of mind, matter, or life, the splendid array of illustrations and examples which they marshal before the vision is like a torchlight procession in a fog: the brighter the lights and the more dazzling the movements, the more distinctly do they reveal the mists which they seem to illuminate, and the more effectually do they confuse and bewilder the spectator. Huxley's *Physiology*, Bain's *Psychology*, Darwin's *Zoölogy*, and Herbert Spencer's *Theology*, are often plausible, because they seem to be clear in statement, copious in illustration, and strong in facts. Their readers do not always observe that there is no cover so convenient for defective and incoherent thinking as a confident and dexterous use of the manifold ambiguities which are

provided in the language of common life, when skilfully introduced among the abstractions of philosophy.

We have dwelt upon this defect of Mill as a philosophic writer at some length, because we think it has not attracted the attention from his critics which it deserves, and because it is especially fitted to impose upon the incautious student. The single example by which we have illustrated the jugglery with which he seems to impose on himself by the use of illustrations and terms from common life, is by no means solitary. It can be matched by a score which are nearly as striking as this of Mill's peculiar treatment of some of the most important conceptions and doctrines of philosophy, in which he has misled himself and his admirers by the fatal ambiguity of his diction.

What is more surprising, he seems to be almost incapable of knowing when he falls into errors of this sort. He is almost equally insensible to the detection, by another, of his own oversights and inconsequences as when these are discovered and confessed by himself. We find an example of this simplicity in chap. xii. of "The Examination of Hamilton's Philosophy," in which he inquires how far the psychological theory of the belief in matter is applicable to the mind. The Psychological Theory, it will be remembered, is the theory which is founded in the four postulates already cited, all derived from the laws of association. This theory would require us to conceive the mind to be "a series of feelings or thread of consciousness, supplemented by or with a background of believed possibilities of consciousness; i.e., feelings which are not, though they might be, realized." After defending this theory against the objections that it is inconsistent with the belief in the existence of other minds, of God, and in immortality, he develops certain intrinsic difficulties,

which he confesses to be insuperable by his analysis. He notices that the experiences of memory and expectation are more than simple sensations, inasmuch as memory involves the suggestion and belief that a sensation of which it is *a copy or representation actually existed in the past*; and expectation involves the belief that a sensation will exist in the future. If, moreover, we speak of the mind as a series of feelings, we are obliged to complete the statement by calling it *a series of feelings which is aware of itself as past or present*. Did ever the hypostatization of abstractions go farther than when a *series of feelings is aware of itself*? But, nothing moved, the author proceeds, "We are thus reduced to the alternative of believing that the mind is something different from a series of feelings, or that something which *ex hypothesi* is but a series of feelings can be aware of itself." And what does the author do under the pressure of this alternative? Does he give up the hypothesis, i.e., the psychological theory according to which the mind is and must be a series of feelings and nothing more, or does he accept the paradox? Neither. Having fairly confuted himself by reducing himself to the dilemma which he derives so logically and states so clearly, he says the fault is not in the theory, but it is in the facts:—

"The truth is, we are face to face with that final inexplicability at which, as Sir William Hamilton observes, we inevitably arrive when we reach ultimate facts, 'one mode of stating which is so much more incongruous than another, that you cannot state the fact in certain phrases without denying its truth.' 'I think, under the circumstances, the wisest thing we can do is, to accept the fact without a theory, and, when we are obliged to describe the fact in terms taken from a theory, to use them with a certain reservation as to their meaning.'"

A reader of these astounding statements might properly inquire whether their writer were sane or in earnest.

After all the imposing assurances in respect to the superiority of the psychological theory held by himself over the introspective or intuitional theory as held by Hamilton, after subjecting the last theory to a scrutinizing analysis, and testing it by its consistency with facts, and its adequacy to explain phenomena, he writes a long chapter to show that the associational postulates fully account for our conception of matter and the external world. He seems to concede that they ought also to explain our conceptions of the mind, and he inquires in another chapter whether they do in fact. He frankly owns that they do not. He even shuts himself up by a dilemma, just as he had a thousand times refuted his antagonists, and had been seeking to refute Sir William Hamilton on every page of this critical examination. Not content with refuting himself in fact, he is free to acknowledge that he has done so. He says, in effect, that he has demonstrated the falseness of his own theory by a *reductio ad absurdum*. But what then? Is the theory thus disproved to be rejected? Not in the least: the fault is in the facts, "in the final inexplicability of all ultimate facts." He calls on Sir William Hamilton to attest that this is so. Should we conceive a man, not only to be logically killed, but to kill himself, and not only to kill himself, but to acknowledge that he is killed, and yet to assert, that after he should kill himself, or had killed himself, he was still alive, we should have a case that would be parallel to this *felo-de-se* of Mr. Mill.

Mr. Mill goes even beyond this. Such an escapade could not escape the notice of his critics, some of whom expressed themselves very freely in regard to it. In the third edition of his work, he writes a long reply to these critics, as an appendix to the eleventh and twelfth chapters, in which he expresses in the meekest

possible way his unfeigned surprise that they have bestowed any sarcasm upon this failure of his theory as acknowledged by himself, and asserts that he never contended or believed that it could be applied successfully to the soul, and that all that he intended to show was, that it was consistent with the belief in God, immortality, and the existence of other beings. We might class a philosopher of this type among the pachydermatous animals, for truly he has shown himself not very thin-skinned; or, more properly, we might conclude that he resembled some Oriental tribes of the human species, who seem, not only to be able to survive the severest operations of modern surgery, but who show little or no sensibility under inflictions which would extort shrieks of agony from a more sensitive Occidental. These are not the only examples of unconscious logical suicide which might be adduced from Mr. Mill's writings. They are abundant and manifest to any critic who is not blinded by a devotion to Mr. Mill's peculiar metaphysics, or by the apparent clearness of his diction when it veils the real ambiguity and incoherence of his reasoning.

One of the most instructive and interesting parts of his autobiography is that which describes "A Crisis in his Mental History," carrying him, as he says, "one stage forward." Before this crisis he was a narrow and devoted Benthamist in his views of government and culture, of morals and philosophy: as the result of it, he very essentially modified his principles in every one of these departments of speculation. Any attentive reader of his articles upon Coleridge, Bentham, and De Tocqueville, of his tract upon Utilitarianism, and his additions to his father's "Analysis of the Human Mind," in the edition of 1867, would not fail to detect the evidences of a perpetual conflict between two

opposing tendencies and almost contradictory principles. In the articles on Bentham and De Tocqueville, almost every characteristic philosophical principle to which Bentham and his father were fanatically devoted, except those technically theological, are deliberately combated. It was only in his devotion to certain practical measures of social and political reform, that Mill adhered to his first teachers, and stood fearlessly by their side as an active combatant. But he confesses that his father no longer sympathized with his political writings. Even his Utilitarianism is another philosophy of Ethics from that taught by Bentham respecting the sources of happiness which are open to man, and the duty of spiritual culture for the independent satisfaction and strength which it ministers; although he retains the fatal necessitarianism which is inconsistent with any possible theory of obligation or responsibility. In the article on Coleridge, the struggle to adjust a compromise between his traditional theories in respect to metaphysical truth and the new light which had awakened so many misgivings, is manifest in the manifold acknowledgments which he makes of the defective construction of Locke's "Philosophy" by many, not to say the most, of Locke's so-called disciples, and his unfavorable representation, not to say travesty, of the so-called transcendental or anti-Lockian metaphysics. It is amusing to observe how, when he ventures at last to give in his adhesion to what he calls the school of Locke and Bentham, he skilfully attaches a "rider" to his exposition of their fundamental principle, which neither Locke nor Bentham had ever announced, when he says, "we see no ground for believing that any thing can be the object of our knowledge except our experience *and what can be inferred from our experience by the analogies of experience itself*," as if under "ex-

perience" and "the analogies of experience," there did not lie hidden a transcendental element, and even, so to speak, an entire system of transcendental philosophy. A similar sensitiveness to the pressure of his obscure convictions, that there are more things in heaven and earth than are dreamed of in his own philosophy, is abundantly manifest in almost every discussion in his "System of Logic" in which there is any occasion to refer to an underlying metaphysics. It is interesting and almost amusing to notice how uniformly in this treatise the author contrives to introduce a full exposition of his own philosophy in the form and under the title of logical discussions, and dexterously avoids introducing the opposite philosophy under the plea that such inquiries would lead him into transcendental metaphysics. But in all these attempts to avoid grappling with fundamental issues, or to dispose of such questions by shuffling compromises, we discern the hazy, unsettled mind, which was determined to adhere to its original bent, even against its underlying convictions that its grounds had not been thoroughly examined, or were not thoroughly trustworthy.

The relations of Mr. Mill's philosophy to that of Auguste Comte have been made the subject of a critical discussion by himself. The subject is also not unfrequently referred to in his "System of Logic." The deviations from Comte, to which he attaches the greatest importance, do not seem to be vital. Most of them are entirely consistent with his acceptance of every principle which is characteristic of and objectionable in the Positive Philosophy. They leave out of the universe the two relations of causation and of design, and shut up science to the observation of phenomena, which are dignified with the name of facts, and to the connection of these phenomena by the relations of likeness and

of succession, which Comte seeks to elevate by calling them laws. Mr. Mill does, indeed, dissent from Comte by contending for psychological phenomena as equally legitimate and equally worthy of scientific study with those which are sensible and material. He moreover positively refrains from asserting that psychical phenomena are within the reach and resources of matter. He does not venture to contend that they are cerebral functions or physiological products. These peculiarities, though important, are not in the highest sense vital; and Mill's metaphysics are substantially Positivist, notwithstanding these positions of dissent. But when he insists on using the term causation, and those which are akin to it, in preference to the terms of mere succession, and freely owns that law and orderliness have usually been referred to a mind, and yet fails to follow out with logical courage and consistency the import of the terms which he insists upon employing, we find fresh examples of his tendency to take advantage of the ambiguity of language to conceal from himself and his readers the uncertainty of his own principles, and to use vacillating compromises in spheres of thought in which they are the least of all admissible.

One of the most glaring examples of the same characteristic is furnished in Mill's "Analysis of the Philosophy of Induction." We did not need to be told by Mill himself that the works of Whewell had first aroused his attention to those axioms or fundamental principles which must be assumed as the grounds of every interpretation of nature. The fact is sufficiently obvious from the frequent references to Whewell's opinions. Mill might reasonably find it impossible to accept the Kantian dialect and the Kantian metaphysics of Whewell; but he could not so easily evade the conclusiveness of the analysis by which Whewell demonstrates that

induction is more than an observation and registration of facts, and requires more than an enumeration and arrangement of similar events or phenomena for the explanation of its sagacious anticipations and its decisive experiments. His characteristic candor bade him state the essential conditions of the inductive process. After this careful and elaborate statement of the problem, it excites nothing less than astonishment to find that Mill has the effrontery to contend that the assumptions which are essentially involved in induction are the products of induction itself, and in language like the following: "The uniformity in the succession of events, otherwise called the law of causation, must be received, not as a law of the universe, but of that portion of it only which is within the range of our means of mere observation, *with a reasonable degree of extension to adjacent cases*. To extend it farther is to make a supposition without evidence, and to which, in the absence of any ground from experience for intimating its degree of probability, it would be ridiculous to affect to assign it." — Logic, B. III., cxxi., § 5. This passage reminds us of the bold utterances of a colored preacher concerning a passage in the sacred history of which his recollections were more confident than correct. "And the Lord said unto Moses in the garden of Eden." Whereupon a brother behind, who was somewhat better informed, caught him by the coat, and whispered, "Moses wasn't there." Upon which the preacher corrected himself, "And the Lord said unto Abraham." Upon this followed a similar correction; to which the preacher, growing confident, repeated, "And the Lord said unto Abraham;" and the critic whispered more loudly and earnestly, "I say, Abraham wasn't there." The preacher, growing excited, reiterated, "I say, Abraham was *there or thereabouts*." This is not the sole

instance in which Mr. Mill substitutes a *thereabouts* of his own for a *there* of writers whom he follows and from whom he dissents.

Mill's editorial notes upon his father's "Analysis of the Human Mind" furnish at least one striking illustration of the defects which have been named. Mr. Mill, the father, in his first edition of this work, 1829, had revived the Hartleyan and Priestleyan doctrine, that inseparable associations explain the processes of belief and knowledge. In his examination of Hamilton, the son confidently sets forth the same doctrine as the only and the all-sufficient solvent for most if not all of the problems of psychology and philosophy, as against the intuitive theory. And yet when he comes to criticise his father's application of the same principle, in explaining belief and knowledge, he rejects it as altogether insufficient, and writes a long note in support of the position that *belief* cannot be resolved into the operation of inseparable associations. When he had occasion to contend against Hamilton, as in the Fourteenth chapter of the "Examination," he urges that the belief in causation can be fully explained by the repetition of the events which are associated as cause and effect: but, when he analyzes the belief of events that have occurred or will occur, he has recourse to two independent and original processes, which he calls memory and expectation; leaving our knowledge and belief of present objects and events to be vaguely classed as feelings or sensations.

We have, perhaps, adduced too many illustrations of what we regard as Mr. Mill's characteristic defects. His excellencies are manifold. Conspicuous among them is his patience of observation and analysis, and a disposition to be thorough whenever the principles of his own philosophy rendered it possible. We have given our reasons for believing that he was not always perfectly

ingenuous toward himself, but that, under the pressure of a sharp and urgent necessity, he suffered himself to be imposed upon by the ambiguity of popular terms and phrases, when it conveniently disguised the difference between a true and a false philosophy.

It is not surprising that a writer who was not always candid toward himself should not be uniformly just toward others. It might seem almost harsh to say that he is not always even fair and generous. He never fails to make a show of being candid and impartial, and doubtless strives to persuade himself that he is so in fact. His "Examination of Hamilton's Philosophy" was indeed a severe test of his mental uprightness. He deliberately grappled with a writer of great learning, unquestioned acuteness, and undisputed pre-eminence; and he was strongly tempted to put him in fault on every possible occasion. Hamilton was by no means invulnerable. His habits of thinking and writing were not the most cautious. Most of his works were posthumous, and subject to the additional disadvantage of having been composed in parts at distant intervals of time, and under the pressure of immediate necessity. It might be supposed that many opinions which he had hastily formed or had somewhat inadvertently phrased, might not be consistent with those which were maturely adopted; although he suffered them to remain uncorrected in the manuscripts from which he lectured. An antagonist assailed under all these disadvantages certainly deserved considerate and forbearing treatment. We cannot think that he always received either. Whether he did or did not, can be settled only by minute criticism of the several points of the discussion. A superficial perusal of the critique justifies and enforces the impression that Mill's attitude toward Hamilton is supercilious and ungenerous, and that there was

little evidence of any magnanimous appreciation of Hamilton's intellectual or personal superiority. Mill's autobiography abounds in judgments concerning many eminent men among his contemporaries. Most of these estimates are unsatisfactory even when they are laudatory. Many of them seem studiously paradoxical and depreciating, and give evidence of nothing so decisively as of a cold and self-centred temper on the part of the critic. Not a few are evidently biassed by anti-theological and anti-Christian prejudices.

We have designedly avoided in this paper giving any prominence to the relation of Mr. Mill's philosophy to theological opinions or religious belief. It is but simply just to say in conclusion, that his philosophy provided scanty room and nutriment for either imaginative idealizations or religious faith. It had as little genuine sympathy with literature as it had with theology, and for one reason among many, that it was conceived in the spirit of partisanship rather than that of research. Mill was a well-trained logician, but he was not an accomplished philosopher. He was an effective advocate and a skilful expounder; but he was neither a broad-minded inquirer, nor a deep-minded interpreter of the constitution of the universe or the soul of man. He tells us very frankly of the striking changes which he experienced in respect to his opinions and aims, in respect to his judgments of literature, culture, and the affections, and his views of Political Economy and Sociology. But, by his own showing, he never freed himself from the narrowness of the principles and habits in which he was trained. He was narrow to the last, narrow even when he strove to be liberal. He was narrow even in the affections of which he made a religion, the ethical fruits of which were cruel to others, however beneficent to himself. He was narrow in his

culture, notwithstanding all his aspirations and efforts after beauty, pathos, and grace in thought and diction; and narrowest of all in the dogmatic and ill-concealed contempt in which he held all those speculations and faiths concerning the future life or the self-existent God, which have uniformly fascinated, even when they have greatly perplexed, all the truly great thinkers of the human race.

VI.

*JOHN STUART MILL AS A THEOLOGIAN.*¹

THREE distinguished English writers, all notorious for their negative attitude toward Theism and Christianity, have left their maturest and ablest writings upon these topics, to be published after their death. Lord Bolingbroke committed his "Letters on History," which had already been privately printed, to David Mallet, who published them in 1753. This procedure elicited from Dr. Johnson the well-known emphatic comment, "Sir, he was a scoundrel and a coward, — a scoundrel for charging a blunderbuss against religion and morality; a coward because he had not resolution to fire it off himself, but left half a crown to a beggarly Scotchman, to draw the trigger after his death."

The ablest work of David Hume, the "Dialogues on Natural Religion," — perhaps the most subtle anti-theistic treatise ever published in the English language, — was written in 1751, but was not published till 1779, some three years after his death. Hume, by his will, appointed Adam Smith his executor, and left him two hundred pounds for the services he might render in editing this work. But fearing that Smith would be unwilling to execute the task, on account of the odium it might excite, he gave the matter in charge to his publisher, and, in the event of Smith's failure to issue the treatise within two and a half years, to a nephew, by whom it was published in fact.

¹ International Review, July, 1875.

Mr. John Stuart Mill was more reserved in his lifetime, in the expression of his religious opinions, than either Bolingbroke or Hume. Had not his autobiography in part prepared the public for what they had reason to expect, these theological essays would have been looked for with a more eager curiosity than they have awakened. There seems to have been no good reason for the delay of the publication of the first two essays contained in this volume, both of which were written between 1850 and 1858. The editor confidently avers that their author did not withhold them for so many years "on account of reluctance to encounter whatever odium might result from the free expression of his opinions on religion." She ascribes his delay to his well-known deliberation in forming his opinions, and his special dislike to express opinions when half-formed. The careful student of Mr. Mill's other writings could not fail to notice, however, that he uniformly avoided any reference to religious questions, or, in the few cases where they have been forced upon his attention, so carefully avoided committing himself, as to seem wanting in both frankness and courage. His actual opinions were so generally understood, and the conclusions to which his philosophy must lead him were so inevitable, that his cautious and studied statements were interpreted as indicating a certain sardonic contempt of the faith or feelings of the most of his countrymen. These feelings were distinctly embodied in the remark in his autobiography, that from his childhood "I looked upon the modern as I did upon the ancient religion, as something which in no way concerned me." This studied and long-delayed reticence cannot easily be reconciled with the emphatic assertion in the same connection, that the time had already come in which it was not only safe for, but obligatory upon, all those who held

opinions opposed to those commonly received, to assert them freely and boldly. For many reasons, the revelations of this autobiography did not open the way for the most favorable reception of his mature and yet long-withheld opinions upon Theism and Christianity. The avowals made in that notable work of the conclusions which he had reached, and the contemptuous or unsympathetic air assumed toward all forms of earnest religious belief, were not fitted to conciliate a very favorable judgment from very many readers, who are not wanting in candor. Nor should it be overlooked, that not a few rejecters of supernaturalism in England and this country, hold a philosophy and a faith which are very far removed from those of Mr. Mill; nor, again, that Mr. Mill's prestige as an authority in metaphysical philosophy has been somewhat diminished by the more imposing proportions and claims of the philosophy of Mr. Herbert Spencer. This writer, although his system rests upon the same psychological basis of inseparable associations, claims that it meets all the requirements of the intuitional metaphysics, and even provides for faith in an inscrutable force or being, who or which is at once the necessary assumption of science, the verified product of all experiments, and the satisfying though ever-changing object of faith and worship.

It might seem almost superfluous to solicit attention to the religious philosophy of so modest a thinker as Mr. Mill, at a time when his ineffectual fires are paling before the radiant splendors of so imposing a teacher as Mr. Spencer. But Mill's system of religious philosophy is, to say the least, a metaphysical curiosity. The discussion of it may also be presumed to give some important indirect results, even though it may not be required for the refutation of his arguments.

The first of the three essays contained in this volume

is entitled "Nature." In both matter and form it is the least interesting. We cannot be mistaken when we pronounce it one of the feeblest of Mr. Mill's productions, for the ambitiousness of its pretensions, the narrowness of its definitions, the defectiveness of its logic, and the repulsiveness of its conclusions. Though written in the maturity of the powers of the author, after he had felt and acknowledged the liberalizing and elevating influences of both poetry and love, and had learned to be catholic in judging, and kindly in appreciating, the opinions and feelings of men from whom he differed very widely, this essay seems to reflect the narrowest and the most acrid spirit of his unripe youth, as well as those bitter prejudices against all who believe in God's goodness, which characterized his early manhood. It would seem that his temper must have been for the most part greatly disturbed, while he thought and wrote out this essay.

He begins by observing that the words *nature* and *natural* have become obscured and entangled almost hopelessly in metaphysical vagueness or contradiction, and that it is greatly to be desired that the words should be subject to the careful and patient sifting of the Socratic analysis. Following this method, he proceeds to define the several meanings of nature. The first which he gives is obvious enough,—the sum of the powers, capacities, and laws which make up an individual thing. Closely connected with this signification is that of the aggregate of all things which exist with the total of their powers, capacities, and laws. In this sense nature is synonymous with the finite universe of material and spiritual beings. The second distinctive meaning is that in which nature is opposed to *art*. But, in this application, the powers which art combines and directs are powers of nature; and the powers

which combine and direct the agencies of nature are themselves natural.

These being assumed to be the two principal senses of the word nature, the author then asks in which of these senses, if in either, is it used when it conveys ideas of "commendation, approval, or moral approbation." That it has been used as the foundation of these ethical ideas, cannot be questioned by any one who knows any thing of the ancient moralists, the Roman jurists, or Christian theologians. These last have indeed been somewhat restrained in giving honor to nature as an authority in morals, by the doctrine of human depravity; but this circumstance has inclined the deistical moralists, especially those of the sentimental school, to exalt nature still more. The doctrine that nature is in some sense an authority to be followed and trusted in morals, is very generally accepted at the present time, though with more or less vagueness of interpretation.

"This employment of the word nature as a term of ethics seems to disclose a third meaning, in which nature does not stand for what is, but for what ought to be." A little consideration will show, as he contends, that there is no third meaning, but that those who "lay down as a rule for what ought to be, a word which in its proper signification denotes *what is*, do so because they have a notion, either clearly or confusedly, that what is, constitutes the rule or standard of what ought to be." Whether this application of the word nature thus defined, is justified, the author proposes to inquire. The necessity for this inquiry, he insists, is still more imperative, if we consider that the word *law* is used in ethics with similar vagueness, being sometimes employed to denote what are called fixed uniformities in the operations of things, as in the phrases, laws of mo-

tion or of chemical combination, and sometimes for what ought to be, as in the phrases, the law of honor, or the law of veracity.

These are the results of the author's preliminary analysis of the meaning of the word nature, before arguing the question proposed in the essay; viz., whether the ethical rule or principle to follow nature, which has been so generally adopted, by so great a variety of thinkers, can be justified. In this analysis the author betrays not the least suspicion or misgiving that he may have overlooked one of the possible significations of the word nature. From his show of candor on the one hand, and his display of acuteness on the other; from the *naïve* confidence of his assertions and the cool assurance of his manner, — the confiding reader would infer that Mr. Mill had covered the field of possible significations. Inasmuch as his subsequent argument rests entirely upon the correctness of this analysis, we may be excused if, before accepting the astounding conclusions to which the author's argument would conduct us, we subject it to a critical examination.

We do not dispute the correctness of Mr. Mill's statement, that the word nature signifies *what is*, in the general sense of the properties and capacities of any one, or of the aggregate of the various beings and agents that exist. It is equally obvious, that, when nature is opposed to art, the instruments and means of art on the one hand, and the operations of art on the other, are limited to the capacities furnished by nature. We submit, however, that what are called the capacities or constitution of a thing, and even the characteristics or contents of its concept, may as properly include what the thing or agent was *intended for*, as well as its one or many capacities, which are manifested or employed in actual results. In other words, what a thing

is, or the nature of a thing, may signify what it was made or exists *for*, as truly as what it achieves in fact.

It is of the nature of a steam-engine to be moved and to generate power by the expansive force of steam, whether it is actually used for this effect or not. It was of the nature of steam to generate power centuries before nature was *followed* by the use of its properties for this end or result. Whenever nature has been conceived of as a guide, or rule, or end of life or action, it has also been uniformly conceived of as a constitution, which was capable of misdirection or neglect, as well as of being followed and obeyed. The end or the natural *use* of its capacities was also supposed to be indicated by its constitution, and therefore to be a part of its nature, and properly to be a constituent element of its contents or definable *essence*, or, in Mr. Mill's language, of *what it is*. Moreover, the nature which the ancient philosophers and the modern jurists and theologians have had prominently if not exclusively in view, in these ethical discussions, has been *human nature*. This human nature they have regarded as a whole, consisting of various impulses or desires, all alike natural, considered singly, and all having a purpose, but capable of failing of the highest result which the human constitution was fitted for, and so of a deviation from the nature or supreme end of man as a whole. A conflict of these separate impulses was supposed, not only to be possible, but inevitable. In such a conflict, the prevalence of some one impulse, and the consequent subjection of the others, was held to be sanctioned and required by nature, and as therefore pre-eminently *natural*. For a man to act according to his nature, i.e., his human nature, was, in their view, to fulfil the ends or purposes of his constitution as a man.

But although the nature of man, or human nature,

has been prominent in the thoughts of ethical thinkers, it has not exclusively occupied their thoughts. Indeed, inasmuch as man cannot be fully understood, except his relations to his fellows and to the physical universe are also recognized, the properties and the laws of the universe of spirit and matter must needs be considered, in order fully to understand the nature and duty of man. For a man to follow nature, consequently signified, not only to act in harmony with the ends and laws of his own individual being, but also to act in harmony with the laws, and in subjection to the ends, of the universe.

It is passing strange that a writer like Mr. Mill, who had been trained in a severe school of logical analysis, and been accustomed from his childhood to state and to scrutinize definitions and arguments, who had moreover written an elaborate treatise on definition and reasoning, and who had given formal notice that he was about to examine with the utmost care the conception in question, for the special purpose of testing the correctness of the reasoning founded upon its definition, and who even included in his plan the purpose to state and examine the various possible senses in which the concept *nature*, and the precept *to follow nature*, had been used, should have so completely failed to recognize the only important signification of the term which could have any possible relation to the question in hand. The frequent and familiar use of the term in this sense, it would seem, could not possibly be overlooked by a careful reader of the most popular and best-known treatises on morals. The necessary limitations of Mr. Mill's own psychological theory ought not to have rendered him insensible to the testimony of history, that other men had in fact used terms in other senses than those which his system had provided for. We can easily see how he might, and indeed how he

must, test the correctness of the definitions of other men by comparing them with his own. But Mr. Mill does not always adhere to his own theories, as, for example, in his well-known paroxysm of ethical earnestness against Mansel. Not only in this instance, but in many others, he has forgotten his own theories, when hard pushed by the pressure of controversy, and even employed against his antagonists arguments which derive all their cogency from a philosophy which he rejects. We may ordinarily assume, however, whether he is aware of it or not, whether he stands upon his own metaphysical ground, or unconsciously shifts his position to the ground of another philosophy, that he is more or less influenced by his own psychological and philosophical theories. For us, it is not easy to see how a writer who defines matter as "a permanent possibility of sensation," and mind as "a series of feelings which is aware of itself as past and future," should be able to conceive of either as having a nature, even in the narrow sense in which Mr. Mill defines it, as that *which is*. We can very easily see how it would be altogether impossible for him to find in human nature, or physical nature, so defined, or in both combined, any thing which could possibly be *followed*. To follow also supposes something like deliberation and free action, or choice subsequent to thought and conclusion. But in Mr. Mill's psychology there is no place for freedom, nothing but impulse, furnished by nature, intensified by repetition, fixed by inseparable associations, and admitting no possibility of disinclination to or dissent from, the dominant and necessitated desire.

It is almost amusing, were not Mill always so solemn, to notice that he condescends to concede that man may be said to follow nature when he intelligently directs his conduct by the laws of nature to the attainment of

his purposes ; i.e., when he uses one law to counteract another. As if this were not in principle, though not in phraseology, all that had ever been contended for. For how could it be possible for a man intelligently to set up one law or force of nature above another unless some reason for so doing were found in nature itself? But, if a reason could be furnished, it must be found in something higher than any single one of these forces or laws, — higher even than their conspiring or aggregate energy ; i.e., in some relation implying an end which might be followed or neglected. But it is more than amusing, it becomes absolutely farcical, to learn from this venerable and most logical utilitarian, that such a construction of the precept to follow nature would only introduce the *prudential* as contrasted with the *ethical* sphere ; his own conceptions of duty having never reached any higher than a somewhat low plane of the prudential.

As we follow Mr. Mill's analysis still farther, we find him raising the inquiry whether, if nature is used in the second sense, recognized by himself, viz., as the spontaneous in contrast with the artificial, the phrase "to follow nature" becomes any more rational. To this question he answers, that to follow nature when taken in this sense would be palpably absurd, inasmuch as it is the duty of man to improve upon nature, rather than to imitate her. Here again Mr. Mill seems utterly unconscious, that, if it be the duty of man to improve upon nature, this duty must in some way have been made known to man through nature ; which would involve the assumption that the *what is* must somehow or somewhere have contrived to suggest or reveal the *what should be*, or the *ideal possibilities* which art should aspire and labor to make real. Overlooking this metaphysical inconsistency, and cleaving to his original nar-

row idea, that the only conceivable way of following nature is *to imitate her actualities rather than to make real the best possibilities which she provides for*, he indulges himself in a long series of rambling observations, the aim of which is to set forth the general immorality of unartificial or spontaneous nature on the grand and the small scale, and to prove, that, if there be any such thing as human virtue or human duty, it is attained by deviating from and improving upon nature by means of art.

Among these observations we find the following:—

“In sober truth, nearly all the things which men are hanged or imprisoned for doing to one another, are nature’s every-day performances. Killing, the most criminal act as recognized by human laws, nature does to every being that lives, and, in a large proportion of cases, after protracted tortures such as only the greatest monsters whom we read of ever purposely inflicted on their living fellow-creatures. . . . Nature impales men, breaks them as if on the wheel, casts them to be devoured by wild beasts, burns them to death, crushes them with stones, like the first Christian martyr, starves them with hunger, freezes them with cold, poisons them by the quick or slow venom of her exhalations, and has hundreds of other hideous deaths in reserve, such as the ingenious cruelty of a Nabis or a Domitian never surpassed.

“But it is said, all these things are for wise and good ends. On this I must first remark, that whether they are so or not, is altogether beside the point. Supposing it true, that, contrary to appearances, these horrors, when perpetrated by nature, promote good ends, still, as no one believes that good ends would be promoted by our following the example, the course of nature cannot be a proper model for us to imitate. Either it is right that we should kill because nature kills, torture because nature tortures, ruin and devastate because nature does the like, or we ought not to consider at all what nature does, but what it is good to do. If there is such a thing as a *reductio ad absurdum*, this surely amounts to one.”

To this last sentence we heartily assent; but the question still remains undecided, whether it is a *reduc-*

tio ad absurdum of the author's misconceptions of the position under discussion, or of the position itself when correctly understood. We also submit, that English philosophy contains very few passages which contain grosser or more inexcusable misinterpretations than those which we have quoted. Not only does Mr. Mill overlook the true sense of the direction to follow nature, as we have already explained, not only does he substitute another meaning, which no man ever held, but, even if his own interpretation were to be allowed, it would not sustain his inference, that the external operations or actions of nature, such as killing, could possibly be accepted as examples for man by any except the most superficial moralists. The most superficial ethical teacher even might be supposed to recognize the axiom that the ethical quality of every action lies in the intention, and not in any external doing whatever,—indeed, that external actions as such are of no possible importance except as they exemplify some intention.

The watchful reader will have observed, that, at this stage of the discussion, Mr. Mill has somehow forsaken the ethical field for that of natural theology. It might be thought too severe to assert that his zeal to depreciate nature as an example in ethics, had insensibly prompted him to take the first occasion to dishonor its Creator; or that, if he should find occasion to do this, he would feel no special objection to believe that a creator of some sort actually exists. If the reader were a sagacious philosopher, he would not fail to notice that Mr. Mill could not make this transition without enlarging his conceptions of the import of nature, so as to find in *what nature is* some import of *what nature intends*. Explain it how we will, we find our author embarked in the solution of one of the gravest problems of natural

theology; viz., that which relates to the divine benevolence. This problem is no sooner proposed for solution than it is summarily disposed of, after the briefest discussion, by the conclusion that the only possible method of vindicating the divine goodness, is to suppose that God is limited in power. In the author's conduct of this brief argument, we observe a similar incapacity fairly to conceive and state the views of theologians, to that exemplified in his representations of the doctrines of ethical philosophy. We do not care to analyze or criticise his argument. It concludes as follows: "The same perfectly wise and good being had absolute power over the material, and made it, by voluntary choice, what it is." To admit this might have been supposed impossible to any one who has the simplest notions of moral good and evil. "Nor can any such person, whatever kind of religious phrases he may use, fail to believe, that, if nature and man are both the works of a Being of perfect goodness, that Being intended nature as a scheme to be amended, not imitated, by man."

This brings our author back upon the ethical field; and he resumes the discussion of the question from which he had digressed, having unconsciously learned by the process that design and purpose, as well as capacities and laws, may be affirmed of *what is*. He now asks whether the Creator's will, i.e., the rule of duty, may not be supposed to be indicated in "the active impulses of human and other animated beings;" i.e., in their instincts and desires. The question in principle does not differ from the broader question, whether nature indicates their rule of duty, by the capacities and endowments of any existing beings. He replies to his own question,—first, that to hold that desire or instinct manifests the rule of conduct, would

exalt blind impulse above reason; and next, that not a single instinct can be discovered in man as he exists in a state of nature, which deserves to be regarded as an impulse to virtue. Courage would, perhaps, be cited first as such an impulse; but Mill roundly asserts, that by nature man is only a coward. Cleanliness is not a natural virtue, for man is naturally the opposite of cleanly; for is it not notorious that children all the world over delight in filth? Not one of the social virtues is natural. Man is by nature invertebrate, selfish, and incapable of self-control. There is no such virtue conceivable as natural justice: justice is an artificial product only, and the growth of social existence. Men are notoriously cruel also, and delight in inflicting pain upon their fellows. If we concede that men have some warm and friendly feelings, still nature or providence has the question to answer, why the animal creation is so completely given up to the havoc of preying and being preyed upon. After discoursing in this fashion, at some length, he sums up the conclusions of his essay as follows:—

“The word nature has two principal meanings: it either denotes the entire system of things, with the aggregate of all their properties, or it denotes things as they would be, apart from human intervention.

“In the first of these senses, the doctrine that man ought to follow nature is unmeaning; since man has no power to do any thing else than follow nature: all his actions are done through, and in obedience to, some one or many of nature’s physical or mental laws.

“In the other sense of the term, the doctrine that man ought to follow nature, or, in other words, ought to make the spontaneous course of things the model of his voluntary actions, is equally irrational and immoral.

“Irrational, because all human action whatever consists in altering, and all useful action in improving, the spontaneous course of nature.

"Immoral, because the course of natural phenomena being replete with every thing, which, when committed by human beings, is worthy of abhorrence, any one who endeavored in his actions to imitate the natural course of things would be universally seen and acknowledged to be the wickedest of men.

"The scheme of nature, regarded in its whole extent, cannot have had for its *rôle*, or even principal object, the good of human or other sentient beings. What good it brings to them is mostly the result of their own exertions. Whatsoever in nature gives indication of beneficent design proves this beneficence to be armed only with limited power; and the duty of man is to co-operate with the beneficent powers, not by imitating, but by perpetually striving to amend, the course of nature, and bringing that part of it, over which we can exercise control, more nearly into conformity with a high standard of justice and goodness."

It is scarcely fair to say that this is a summary of the creed of Mr. Mill. It is little more than a series of negations. So far as ethics are concerned, it is purely negative, asserting only what is *not true* of nature as an instructor and director of duty. It is almost equally negative in respect to theology, asserting, that if God is good, and so far as he can be proved to be good, he does not possess unlimited power; and, so far as man is good, he should avoid imitating the operations of nature, but should seek to improve upon them. From what source, or by what methods, a man derives the ideas of duty, or the sense of obligation by which he is taught to improve upon nature, and to judge of the beneficence of God, Mr. Mill gives no intimation.

But, whatever view we take of these conclusions, Mr. Mill has failed to justify them by any solid reasons. His reasonings are all directed against conceptions of nature which were never held by a single individual of the many philosophers, jurists, or theologians, who have proposed nature as an ethical teacher or guide. His conclusions are the unproved and often the unsupported assertions of a narrow and splenetic dogmatist,

who persistently insists on the one hand, that the universe is not completely controlled by a benevolent ruler, and asserts most inconsistently on the other, that there is every reason to hope, that, if man endeavors to make the same universe better than he finds it, he has the amplest encouragement for perpetual progress and certain success.

It might seem to be a useless and thankless undertaking to dwell so long upon an argument which is so perverse and unsatisfactory as this. It is, indeed, in every respect unsatisfactory: it is unsatisfactory as a statement of the theory which the author takes such useless pains to refute; it is unsatisfactory as an argument for the views which the author asserts; while, as an argument against the benevolence of an unlimited Creator, it is pre-eminently superficial and dogmatic. In two respects, however, the essay is very significant: (1) the author attaches great importance to its reasonings and doctrines, as is most evident from the confidence with which he refers to this essay in the two which follow it, as further developments of his religious philosophy; (2) it also expresses the creed of a school which is becoming not inconsiderable, even among English and American writers, and is likely to prove a somewhat formidable antagonist, even to a wholesome and hopeful theism.

The essay is also instructive, as we have already intimated, as showing how completely inadequate is Mr. Mill's metaphysical system for the construction of a satisfactory or even a fixed philosophy of religion. Mr. Mill makes no show of his philosophical theory in his reasonings. He rather conceals it from view, as he is apt to do. He now and then even abandons it, and reasons from the ordinary principles of conscience and common sense. But he is none the less completely

swayed by its influence. To us it is no matter of wonder that a system made up of associational psychology, empirical metaphysics, prudential ethics, and necessitarian fatalism, should be incompetent to lay the foundations or rear the superstructure of a religious theory of the universe. Mr. Mill has no need to obtrude upon our attention the peculiarities of his instrument and method. The results make them but too conspicuous. A telescope which stands upon an unstable pedestal, and is furnished with imperfect lenses, and moved by imperfect machinery, must of necessity give images with vague outlines and blurred surfaces. Mr. Mill's philosophy appears to bad advantage when it is applied in the service of a science of nature considered as the aggregate of finite, physical, and spiritual existence. It is not surprising that it should fail altogether to justify the belief in a self-existent Originator and Moral Ruler of this finite universe, who is unlimited in power and perfect in goodness.

The weakness of Mr. Mill's philosophy is singularly conspicuous in the reasonings of both father and son in respect to the goodness of God. We learn from the autobiography of the son, that there was no opinion to which the father adhered more positively than that the universe was to a certain extent under the control of some principle or source of evil which limits and interferes with the benevolence of the Creator. He was led to this conclusion by the argument in "Butler's Analogy." This argument was, in his view, decisive to the conclusion that the same difficulties which inhere in the scriptural representations of God are found in the moral administration of the universe. For a while the argument satisfied him that the revelations in the Scriptures were from God, and ought to command his confidence and his complacency. But, on further reflec-

tion, he found himself drawn back to the more radical conclusion, that the administration of nature itself could not be vindicated to his reason and conscience, except on the theory that the benevolence of God is in some way thwarted and controlled by the limitations of his power. This doctrine was held with fanatical dogmatism by the father, and was literally *inculcated* by his hard and positive temper into the receptive and plastic nature of the son. It is the strong and ever re-appearing warp of the argument in these essays, into and athwart which are wrought all the minor arguments which make up the tissue. Even at the very close of the last essay, after the ample and almost pathetic concessions to Christian theism which he makes, as it would seem, out of the gentle and truth-loving impulses of his better nature, he gives as his last thought to the world, that in addition to the other moving influences to love and duty which proceed from God, and Christ, and immortality, the motive should not be overlooked, that, by our personal love and duty, we may give aid and sympathy to God himself in the unequal conflict which he is maintaining with the inevitable and persistent evil.

In all this argument, as conducted by both father and son, there seems not to have been the faintest approach to a suspicion that the difficulty in the way of receiving the doctrine of a benevolent God was created by the bald and outspoken necessitarianism of their psychological philosophy. The associational psychology involves by a logical necessity the conclusion that every man's character and actions are the product of circumstances. It necessarily excludes the possibility of individual responsibility in any proper sense of the phrase. Any science of sociology, and any philosophy of history, would be impossible, in the judgment

of Mr. James Mill, Mr. John Stuart Mill, and Mr. John Morley, unless every individual man and all the societies of men were formed by the environment of each according to laws the operation of which is as fixed and inevitable as is the operation of gravitation and chemical affinity. The distinction between fatalism and necessity made by Mr. Stuart Mill is designed to meet a difficulty which is simply practical, and does not alter in the least his theory of man's responsibility, and of his consequent moral liabilities.

Now, it ought to have been no secret to any of these gentlemen, that the majority of theists who have attempted to explain and vindicate the divine goodness, have derived most of their arguments from the essential nature of freedom as the necessary condition of moral responsibility. It was entirely a proper question for them to discuss, whether or not these arguments were pertinent or satisfactory; but it was not left to their option as courteous or even as well-informed critics to leave this class of arguments unnoticed, or to ignore their existence and importance, as matters of philosophical history. An impartial critic will readily see, that it must make the greatest possible difference in the judgments which we form of God's benevolence, whether we do or do not include, as an essential element to be considered, the reality and the importance of individual responsibility, and that a reasoner who denies the freedom which is its essential condition, and accepts in its place the doctrine of necessity, is driven by a logical necessity to the conclusion, that God is either not supreme in goodness or not unlimited in power. But Mr. Mill had never the capacity to look at any argument from any other point of view than that which his own philosophy permitted. The weak and false and vacillating conclusions which he so often reached, very

often illustrate nothing so strikingly as the uncertainty or the falseness of his underlying philosophy.

The second essay, on "The Utility of Religion," is less speculative in its character than the essay on "Nature." And yet it is scarcely less important as an exposition of certain practical features of his religious philosophy. The drift of its argument is against the almost universal impression, that some form of positive religion is useful and even necessary for the moral well-being of man. The author, in opposition to this view, contends that many of the elevating and restraining influences usually ascribed to religion alone, are in fact due to the influence of authority, by which the principles and impulses of men are so largely moulded. Authority, he urges, can be exercised as efficiently without as with religious motives; overlooking very strangely, as it seems to us, the fact that the force and energy of authority must be intensified when the authority of God is superadded to that of any and all human beings. Even if it were conceded that the force from these two sources was similar in kind, it might still remain true, that the authority of religion is not only useful but indispensable. Mr. Mill urges next, that education has done vastly more than religion in elevating the human race, and that the Grecian states especially are examples of what education can do with the least possible assistance from any religious force. He also contends that public opinion exerts a potent formative influence upon the character, overlooking the often unnoticed yet always energetic part which religion has uniformly played in moulding and animating both education and public opinion. Next, he borrows from Mr. Bentham an argument, the object of which is to show, that the influence of religion is conspicuously weak in deterring men from perjury, duelling, and illicit sexual intercourse, — an argument of which

it is difficult to see the force, so long as decisive evidence is not adduced, that men who are manifestly swayed by religious influences are as little restrained as other men when tempted to these three forms of sin. That religious motives are very often impotent to deter many from these offences, proves nothing except that temptations to commit them are specially powerful with the majority of the race. The special power of religion to sustain men under severe persecution and even extreme torture, is disposed of by referring it to "a divine enthusiasm, — a self-forgetting devotion to an idea; a state of exalted feeling by no means peculiar to religion, but which it is the privilege of every great cause to inspire," — which is met by the query whether religion is not, in its motives and inspiration, the greatest of all causes. From these general considerations the author advances to the special position, that if it be granted, as it should be in all fairness, that, in the past, religion has been efficient and necessary in teaching and enforcing morality, its aid is required no longer, for the reason, that, when ethical truth is accepted and approved, it shines by its own light, and attracts by its own radiance. Religion is no longer useful, because the occasion for its influence has been outgrown. Its addresses to the fears of men may be laid aside; and it is desirable they should be dispensed with as ignoble, and consequently, in the present state of society, as any thing but useful. Its power to elevate and kindle the imagination may be conceded, and its actual influence in this direction may be gratefully acknowledged. But, if the imagination can be stimulated and purified by ideal pictures, the same results will follow.

"It has still to be considered, whether, in order to obtain this good, it is necessary to travel beyond the boundaries of the world which we inhabit; or whether the idealization of our earthly life,

the cultivation of a high conception of what it may be made, is not capable of supplying a poetry, and, in the best sense of the word, a religion, equally fitted to exalt the feelings, and (with the same aid from education) still better calculated to ennoble the conduct than any belief respecting the unseen powers."

That present and finite objects and motives are capable of producing these effects, is argued as follows:—

"When we consider how ardent a sentiment, in favorable circumstances of education, the love of country has become, we cannot judge it impossible that the love of that larger country, the world, may be nursed into similar strength, both as a source of elevated emotion and as a principle of duty." "This exalted morality would not depend for its ascendancy on any hope of reward; but the reward which might be looked for, and the thought of which would be a consolation in suffering and a support in moments of weakness, would not be a problematical future existence, but the approbation, in this, of those whom we respect, and ideally of all those, dead or living, whom we admire or venerate."

The author therefore infers, that, for all the exigencies of men, the *Religion of Humanity* is better than *Supernatural Religion* of any kind:—

"For, in the first place, it is disinterested. It carries the thoughts and feelings out of self, and fixes them on an unselfish object, loved and pursued for its own sake. The religions which deal in promises and threats regarding a future life, do exactly the contrary: they fasten down the thoughts to the person's own posthumous interests," etc.

"Secondly, it is an immense abatement from the worth of the old religions as a means of elevating and improving human character, that it is nearly, if not quite, impossible for them to produce their best moral effects, unless we suppose a certain torpidity, if not positive twist, in the intellectual faculties. For it is impossible that any one who habitually thinks, and who is unable to blunt his inquiring intellect by sophistry, should be able without misgiving to go on ascribing absolute perfection to the author and ruler of so clumsily made and capriciously governed a creation as this planet, and the life of its inhabitants."

If a man, to adjust the strife between his moral convictions and his faith, accepts the conclusion that morality in himself and in God are different attributes,—

“The worship of the Deity ceases to be the adoration of abstract moral perfection. It becomes the bowing down to a gigantic image of something not fit for us to imitate. It is the worship of power only.”

The religion of humanity has the still further advantage, that it relieves men with intellectual and moral independence, from believing that God, as represented in the Scriptures, can possibly be good.

“He who can believe these [and the characteristics of God as set forth in and through the Scriptures] to be the intentional shortcomings of a perfectly good Being, must impose silence on every prompting of the sense of goodness and justice, as received among men.”

“Only one form of belief in the supernatural — one only theory respecting the origin and government of the universe — stands wholly clear, both of intellectual contradiction and of moral obliquity. It is that which, resigning irrevocably the idea of an omnipotent Creator, regards Nature and Life, not as the expression throughout of the moral character and purpose of the Deity, but as the product of a struggle between contriving goodness and an intractable material, as was believed by Plato, or a principle of evil, as was the doctrine of the Manicheans.” “Against the moral tendency of this creed no possible objection can lie: it can produce, on whoever can succeed in believing it, no other than an ennobling effect.”

The author concedes that the supernatural religions possess one advantage over the religion of humanity, in the prospect they hold out to the individual of a life after death. But he urges that man has no rational desire for continued existence in itself, and that, as man rises in intellectual culture and in unselfish desire, he will be trained by degrees, rather to prefer annihilation to immortality. Or, as he expresses himself,—

“It seems to me not only possible but probable, that in a higher, and, above all, in a happier, condition of human life, not annihilation but immortality may be the burdensome idea; and that human nature, though pleased with the present, and by no means impatient to quit it, would find comfort and not sadness in the thought that it is not chained through eternity to a conscious existence, which it cannot be assured that it will always wish to preserve.”

To a conclusion so lame and impotent as this, is the author reduced in order to sustain his position that supernatural religion is no longer required for the moral elevation or the happiness of man. As man does not need religion for his moral culture, because, though he may have risen by means of its aid, he has outgrown the capacity of any longer receiving help from its authority or its inspiration; so he does not require religion for his comfort, because he does not care for the immortality which it reveals and promises. It is a significant fact, that similar sentiments in disdain of immortality are rapidly becoming current among certain literary circles. It is worth notice, how those who cherish and defend them assume that they are more unselfish than the vulgar longings for continued personal existence; how pantheists and empiricists both unite in rejecting with supercilious pride or affected indifference the gift of eternal life, if it is to be received as a gift of God. Mr. John Morley uses all the pomp of words and the splendor of pictorial imagery to set forth the blessedness of prospective annihilation and the peace of anticipated non-existence, in a memorable and most eloquent passage, which concludes in these words:—

“And a man will be already in no mean paradise if, at the hour of sunset, a good hope can fall upon him like harmonies of music, that the earth shall still be fair, and the happiness of every feeling creature still receive a constant augmentation, and each good cause yet find worthy defenders, when the memory of his own poor

name and personality have long been blotted out of the brief recollection of men forever."

George Eliot expresses the same in a poetic prayer, the splendid imagery and elevated moral aspirations of which are impotent to weaken the impression upon the reader that the language of inspiring hope is made to do service to depressing despair.

"Oh may I join the choir invisible
Of those immortal dead who live again
In minds made better by their presence ! live
In pulses stirred to generosity,
In deeds of daring rectitude, in scorn
For miserable aims that end with self,
In thoughts sublime that pierce the night like stars,
And with their mild persistence urge man's search
To vaster issues . . .

This is life to come,
Which martyred men have made more glorious
For us who strive to follow."

The last and the longest of Mill's Essays is for many reasons the most interesting and significant of the three. Its title is "Theism ;" but it treats also of immortality, of revelation, of miracles, of Christianity, and Christ, and of the beneficent and powerful influences of supernatural religion as compared with the religion of humanity. It was written only a few years before the death of Mr. Mill. It indicates a fairer intellectual spirit, and a more kindly feeling toward Christ and Christian believers than the first two essays. In respect to many points, the author retains and re-asserts the same opinions contained in these earlier discussions. In respect to others, he very considerably modifies his opinions. The argument for the being and attributes of God is scrutinized with great earnestness and logical acumen from the point of view given in Mr. Mill's phi-

losophy and psychology as re-enforced by the doctrines of the conservation of force and the struggle for existence. There are philosophers, however, who do not accept his philosophy. There are those who do not believe that the belief in causation and in the unity of the universe is derived from experience or verified by experiment. Such might be willing to concede, that on the basis of any philosophy whatever, whether it be intuitional or experiential, the existence of God cannot be proved by induction or demonstrated by syllogism. To such, Mr. Mill's failure to reach intellectual satisfaction by an argument, only adds to the demonstration furnished by many similar failures, that truths like these are incapable of argumentation. But Mr. Mill's objection to accepting the truth as *à priori*, that it is deduced from *an idea* or *an instinct*, would only excite the wonder, if it did not the ridicule, of any intelligent advocate of this theory as held in modern times. For a practised controversialist, Mr. Mill is singularly incapable of justly appreciating and faithfully representing the views of any school except his own, and almost uniformly fails to conceive how any man can possibly reason or think in any other way than he does. That the belief in an intelligent originator is the necessary assumption to the belief in an orderly universe, and therefore the condition of all special induction, is a proposition which Mr. Mill would seem to be incapable of understanding, so far as to conceive how any sane man should hold it. That a man with these limitations should fail to find what he calls an argument decisively proving that God exists, is to us altogether intelligible.

Of the natural attributes of God, he asserts that omnipotence is incompatible with design,—an old assertion, which gains no new force as repeated by Mr. Mill. He adds, that if matter and force are eternal, as would

seem to be probable, we find in this an additional reason for believing that the power of God is limited. When he adds that there is no decisive proof that God is absolutely omniscient, and that God's foreknowledge need not extend to all future events, he simply expands and enforces what he had already announced in the essay upon "Nature." In respect to the benevolence of God, he re-affirms what he asserted so positively in that essay, but with far less bitterness of spirit.

He gives the following as

"The net results of natural theology on the question of the divine attributes. A Being of great but limited power, how or by what limited we cannot even conjecture; of great, and perhaps unlimited, intelligence, but perhaps, also, more narrowly limited than his power; who desires, and pays some regard to, the happiness of his creatures, but who seems to have other motives of action which he cares more for, and who can hardly be supposed to have created the universe for that purpose alone."

Leaving the doctrine of God as so far established, the author proceeds to the discussion of immortality. The conclusions which he reaches are, that, apart from the designs of the Creator, there is no evidence for the future existence of the soul from its own essence, or from its aspirations or desires. If we reason from the power or goodness of God, both of which have been proved to be limited, we can infer only, that there is room to hope that both the one and the other may possibly grant this gift to man, provided it would really be beneficial to him.

Strangely enough, Mr. Mill next proposes the problem of revelation in a general sense, including the possibility, the credibility, and the actuality of miracles. The chapter on this topic is singularly fair and even-handed, and in the discussion of this subject the author shows himself an able expounder of the principles

of evidence. Possibly his philosophical theory of the grounds of our faith in the laws of nature and in the power of God, may have had some influence in determining his positions. The conclusion which he draws is this, "that miracles have no claim whatever to the character of historical facts, and are wholly invalid as evidences of any revelation."

Thus far Mr. Mill seems to proceed in a line of thought in which he is, with here and there an exception, consistent with himself. But in the "general result," in which he proposes to gather together the several lines of argument, and to bring them to a consistent and well-supported conclusion, he opens a new line of thought, and, as it were, turns back upon and reverses his previous course of argumentation. This general result covers less than fifteen pages; but in these few pages Mr. Mill presents himself in a new attitude, and seems to reason from a new point of view, and in a direction which is opposed to that of the entire volume. The sentiments expressed in this general result are doubly interesting from the fact that this is the last utterance of the author upon a subject which had occupied many earnest thoughts during his lifetime.

The new point of view is what he himself, in the second essay, has somewhat *naïvely* described as "the theism of the imagination and feelings," as not incompatible with the "scepticism of the understanding." How he could possibly satisfy himself with any conclusions reached from this point of view, especially after the abundant and almost passionate protests which he urged in all these essays, against reasoning from what he calls "instincts" and "ideas," it is not our duty to explain. That he did do this is evident in almost every line of this concluding chapter. That he did it deliberately and upon a theory is manifest from his auto-

biography, in which he speaks of his "conversion" to the position that it is absolutely essential to cultivate and exercise the sensibilities and the imagination for the sake of their effect upon character and happiness. The theory, as he held it, not only entirely overlooks any necessary, or even any conceivable, connection between the sensibilities and the imagination and intellectual conviction, but it proceeds on the supposition, that the truth for which the understanding fails to provide, or which it is forced entirely to reject, may be accepted by the imagination and embraced by the feelings. In a similar spirit Tyndall asserts, in the address delivered at Belfast, —

"For science, however, no exclusive claim is here made: you are not urged to erect it into an idol. The inexorable advance of man's understanding in the path of knowledge, and those unquenchable claims of his moral and emotional nature which the understanding can never satisfy, are here equally set forth." . . . "‘Fill thy heart with it,’ said Goethe, ‘and then name it as thou wilt.’"

It is worth noticing, as a sign of the tendencies of the times, that this gross form of sentimentalism seems to be epidemic among a very large class of anti-supernaturalists and negative thinkers. Even Mr. John Morley, who in the "Fortnightly Review" for November, 1874, and January, 1875, argues very earnestly and ably against the sentimental argumentations of Mr. Mill, does yet draw very largely upon the imagination for the gorgeous drapery which he requires to hide and to adorn the repulsive hideousness of his own ghastly creed, and places great reliance upon the noblest and the tenderest emotions, which in their nature are stronger than death, to persuade the soul that shrinks from the extinction of its being, that it can only attain to the apotheosis of self-forgetfulness by

being willing to forego the hope of immortality. George Eliot even, depends upon the richness of her own affluent and soaring imagination, and the pathos of her singularly tender and sympathizing heart, for the splendid imagery and moving appeals which almost reconcile herself and her reader to the abnegation of the most exalted hopes and the noblest faiths of human nature.

The conclusions which Mr. Mill sets forth in this remarkable conclusion are, that "the whole domain of the supernatural is removed from the region of belief into that of simple hope; and in that, for any thing we can see, it is likely always to remain." He then asks, "whether the indulgence of hope, in a region of imagination only," "is irrational, and ought to be discouraged as a departure from the rational principle of regulating our feelings, as well as opinions, strictly by evidence?" To this question of his own asking, he replies, that human life stands greatly in need of "a wider range and greater height of aspiration for itself and its destination," "and that it is the part of wisdom to make the most of any, even small, probabilities on the subject, which furnish imagination with any footing to support itself upon." "On these principles, it appears to me that the indulgence of a hope with regard to the universe and the destiny of man after death, while we recognize as a clear truth that we have no ground for more than a hope, is legitimate and philosophically defensible." What Mill called only a hope, resting on the slightest and scarcely preponderating probabilities, others regard as so nearly self-evident as to be the most trustworthy truth. The sentiments which he would cherish for the sake of their elevating tendency and their kindling power, others would say were justified by the most obvious and decisive analogies. What he would inculcate as worthy and uplifting

sentiments, others would enforce as the natural result of the most elevating truths. The processes which are often dignified by the appellation of faith, as an activity justified by reason, which also quickens the imagination and kindles the sensibility, Mill would lower to the regions of the imagination and sensibility, with the faintest and feeblest suggestions of reason. But, while Mill remands the truths and faiths of religion to the limbo of mere possibility, he fully concedes their beneficent influence, even where they are regarded as only imaginary ideals. In the second essay, he had elaborately argued the point, that the need of religion is so completely outgrown as to have made it utterly useless. In the conclusion of the third essay, he concedes, that although as a matter of faith, and as requiring and resting on objective truth, religion may be outgrown, yet, even "as presenting definite and elevating ideals to the imagination, it is infinitely precious to mankind." He dwells upon the familiarity of "the imagination with the conception of a morally perfect Being, and the habit of taking the approbation of such a Being as the *norma*, or standard, to which to refer, and by which to regulate our own characters and lives." He even concedes "that the *undoubting belief* of the real existence of a Being who realizes even our best ideas of perfection, and our being in the hands of that Being as the Ruler of the universe, gives an increase of force to these feelings beyond what they can receive from reference to a merely ideal conception." This undoubting belief is not, indeed, warranted by evidence. Those who carefully weigh the considerations for and against, must lose somewhat of this "increase of force to these feelings." But what they lose in respect to force, they gain in the purity of their ideal. They find no moral contradictions in the object of

their faith. If they cannot believe in a God of infinite power, they can believe in a God who is as good as his limited power will allow.

Even the absolute unbeliever can avail himself of the ideal Christ which Christianity presents, and which can never be lost to the world, whatever may be thought of the origin of the ideal or of the history which records it.

“Whatever else may be taken away from us by rational criticism, Christ is still left, — a unique figure, not more unlike all his precursors than all his followers.” “But Christ stands alone; for who among his disciples or among their proselytes was capable of inventing the sayings ascribed to Jesus, or of imagining the life and character revealed in the Gospels?”

Christ must have been “in the very first rank of the men of sublime genius of whom our species can boast.” “When this pre-eminent genius is combined with the qualities of probably the greatest moral reformer and martyr to that mission who ever existed upon earth, religion cannot be said to have made a bad choice in pitching on this man as the ideal representative and guide of humanity; nor, even now, would it be easy, even for an unbeliever, to find a better translation of the rule of virtue from the abstract into the concrete, than to endeavor so to live that Christ would approve his life.”

When we add the possibility that Christ was more than this, i.e., “a man charged with a special, express, and unique commission from God, to lead mankind to truth and virtue,” we may conclude that the influences of religion on the character are well worth preserving, and that “what they lack in direct strength, as compared with those of a firmer belief, is more than compensated by the greater truth and rectitude of the morality which they sustain.”

With these concessions, Mill leaves his readers. That he should make them, is a far higher and more decisive testimony to the sensibility of Mill, as a man, to the necessities of his own moral nature, than to his sagacity as a philosopher and his self-consistency as a logician. His admiring or apologetic disciples may explain or excuse these concessions as they will ; but his impartial though not unkindly critics cannot fail to find in his last utterances upon religion a decisive, because an unconscious and even a reluctant, testimony to the truth and importance of Christian theism.

The autobiography of Mr. Mill, and those three Essays upon Religion, are his last legacies of thought and feeling. The autobiography leaves him "in a cottage as close as possible to the place where Mrs. Mill was buried ;" declaring that her memory was to him a religion, and her approbation the standard by which he endeavored to regulate his life. His Essays on Religion conclude with his honest testimony to the value of faith in a personal God, and a glowing tribute to Christ, as the perfect ideal of human excellence, and possibly as an extraordinarily furnished and commissioned messenger from God to man. Both these volumes are remarkable for many things, but for none which are more worthy to be pondered than these passages.

VII.

*PROFESSOR TYNDALL'S LAST DELIVER- ANCE.*¹

PROFESSOR TYNDALL has the reputation, and deservedly, of being one of the most brilliant expounders of modern physics among living Englishmen. He is clear and condensed, vivacious and eloquent. It were hard to say whether insight or imagination, method or diction, has the most to do with his success. Though his themes are limited, he rarely repeats himself. The order of his thoughts is usually novel, and his illustrations and language are always fresh and varied. For these reasons he is always welcome as a lecturer, and he rarely disappoints his hearers. He shares with Mr. Huxley the honor of having demonstrated, each in his own way, that a discipline of classical culture, or of early literary studies, is by no means essential to the training of an effective popular speaker or lecturer upon the severest topics of science. We say each in his way; for the excellencies of Mr. Tyndall and Mr. Huxley are unlike, — Mr. Tyndall being strong in illustration, ornament, and suggestiveness; while Mr. Huxley excels in directness, simplicity, and force.

The specialty of Mr. Tyndall, as is well known, is that department of physics which includes the kindred

¹ Science and Man. Presidential Address, delivered before the Birmingham and Midland Institute, Oct. 1, 1877, with additions. By Professor John Tyndall, LL.D., F.R.S. *Fortnightly Review*, Nov. 1, 1877. — *The New Englander*, January, 1878.

agents of light, heat, and electricity. Mr. Huxley is eminently a physiologist, — both human and comparative. Neither of the two, however, confines himself to the specialties named, especially in their popular lectures and addresses; both being more than usually fond of following out the suggestions of physics and physiology in respect to the nature of the soul, the progress and destiny of man, and the origin and end of the physical universe. In plain English, both these gentlemen are very fond of teaching the public metaphysics and theology after what they please to call the methods and conclusions of physical science. We do not altogether blame them for this. The desire and effort show a generous recognition of other phenomena than those which are included within their own departments, and the rooted conviction that all truth is one, and therefore it is impossible that any science of nature should conflict with the other forms of scientific truth, or offend any rational conviction. Professor Tyndall has appropriated to himself a somewhat wider field of discussion than Professor Huxley; having discussed very frequently the method of scientific inquiry with a sagacious appreciation of the problem, and with commendable, if not always consistent, sagacity in solving it. From the metaphysics of induction, he has very naturally proceeded to discuss the nature and essence of the soul, and has consequently yielded to the further impulse to inquire what science teaches concerning freedom, morality, immortality, prayer, and God. All this has been done under the impulse of an implicit faith in what he calls science. His confidence concerning his mastery of what he calls the known, and the analogies which it suggests in respect to the unknown; his predictions of what is the inevitable tendency of modern thinking in respect to every one of the topics named, and the eager haste

with which he seeks to place himself among the foremost of its heralds, — are contagiously exhilarating, even to the looker-on who neither accepts his data nor his inferences. How much more must the lecturer himself enjoy the glowing excitement with which he sweeps along his triumphant course, and the responsive enthusiasm of his confiding and admiring audiences. It is not surprising, as from year to year he grows more confident in his psychological and theological faith, and is more and more aware of the power which he wields, that he should take occasion as often as once a year to announce with befitting eloquence and ardor the advances by which the thoughtful men of the age are fast proceeding towards the mastery of the universe by scientific thought after truly scientific methods. On the 1st of October last he gave one of these confessions of his faith before the Birmingham and Midland Institute, of which he is president. It was characterized by his usual gracefulness in the introduction, and by his never-failing ingenuity in the development, and by more than usually startling frankness in the conclusion. In reading such a discourse, we very naturally ask, Of what topic does it treat? We confess that this is a question which it is not easy to answer. It might almost seem at first that it treats *de omni scibili et quibusdam aliis*, so wide is the range of subjects which it passes in review. It will be safe to say, in the author's own words, that he begins by asserting "that it is now generally admitted that the man of to-day is the child and product of incalculable antecedent time: his physical and intellectual textures have been woven for him during his passage through phases of history and forms of existence which lead the mind back to an abysmal past," and that he concludes with the equally confident assertions, "Thus following the lead of phys-

ical science, we are brought without solution of continuity into the presence of problems, which, as usually classified, lie entirely outside the domain of physics. To these problems thoughtful and penetrative minds are now applying those methods of research which in physical science have proved their truth by their fruits. There is on all hands a growing repugnance to invoke the supernatural in accounting for the phenomena of human life ; and the thoughtful minds just referred to, finding no trace of any other origin, are driven to seek in the interaction of social forces the genesis and development of man's moral nature. If they succeed in their search, — and I think they are sure to succeed, — social duty will be raised to a higher level of significance ; and the deepening sense of social duty will, it is to be hoped, lessen, if not obliterate, the strife and heart-burnings which now beset and disfigure our social life." The terminus *a quo* is evolution as an admitted fact of the widest conceivable application. The terminus *ad quem* is a rounded scientific theory which excludes all faith in the supernatural, and any possible scientific occasion for God ; involving, as a corollary, the development from society of all the relations and sanctions of moral obligation. This faith is fitted to elevate practical morality, and to deliver social life forever from its strifes and hatreds. All these positions except one had been asserted or implied in Mr. Tyndall's previous deliverances. The only advanced position which he takes in this discourse is the very familiar dogma of Hobbes, which has been transfigured by Herbert Spencer, that moral distinctions are created or evolved from social relations, and are sanctioned by social forces. "But, if this is all that is new in this address, why notice it at all ? We have had enough of all this at Belfast and on other occasions, and the staple of such reasoning has

been so often used that it is becoming somewhat threadbare." But this does not follow. Mr. Tyndall never repeats himself. If his logic is in principle unchanged, the form in which it is presented always varies. Every time he rises to argue on these extra-physical themes, he adduces what he considers new facts, and employs fresh and novel illustrations. He invariably aims to strengthen the most familiar and oftenest-used chain of argument by some links freshly forged. Moreover, he is sensitively alive to what the men of these times are thinking of, — so sensitively, that he cannot rest content with old arguments when new ones are required. He is too ingenuous not to confess, or at least not to betray, his sense of the weakness of some of the positions which he had previously taken, and too ingenious not to attempt to strengthen them. The occasional discourses of so sensitive and frank a thinker as he, are also in a sort the outspokening of what is going on in the minds of scores and hundreds of men who want the honesty or the opportunity to speak their minds as freely as he speaks for them. What is more to the purpose, they declare the secret misgivings and the more than half-formed creed of multitudes of younger men who know not how to answer the reasons of an argument from the conclusions of which they shrink. These are the reasons why we think it worth while to subject this eloquent discourse to a careful examination. We shall do this with the same frankness which our excellent friend, the author, always exhibits, and we hope with equal fidelity to the scientific spirit by which he is animated.

We observe, before the argument begins, a little skirmishing, the design of which is not at first view very obvious. In speaking of the dependence of the individual upon the forces of the past, Professor Tyndall says that Boyle regarded the universe as a machine, but

Mr. Carlyle prefers to regard it as a tree, and adds, "A machine may be defined as an organism with life and direction outside a tree may be defined as an organism with life and direction within." This language seems novel. Can a machine be an organism, — and an organism with life? Surely the common speech of Mr. Tyndall has made him forget his philosophy. It seems a pity that his German studies did not suggest to him the well-worn definition from Kant, — from whom he is somewhat fond of quoting commonplaces, — that "an organism is that in which the parts and the whole are respectively means and ends."¹ How marvellous that this commonplace and yet fundamental conception of physiology should have been so strangely misconceived, through the apparent haste of Mr. Tyndall to give, as he does in the next sentence, an atheistic turn to his very inadequate conception of what an organism is. "I close with the conception of Carlyle. The order and energy of the universe I hold to be inherent, and not imposed from without, — the expression of fixed law, and not of arbitrary will." In this, also, he forgets the patent truth, that, in the judgment of the great majority of scientific thinkers, an organism in its very conception implies intelligence without itself. His confusion of mechanical with organic relations is still more apparent, as he traces the growth of scientific theories from vague anticipations into verified discoveries and fixed methods, and concludes with the remark, which is least of all true in respect to the science of organized existence, that "the interdependence of our day has become quan-

¹ "Ein organisches Product der Natur ist das in welchem alles Zweck und wechselseitig auch Mittel ist." *Kritik der Urtheils-Kraft*, § 66. To understand the complete significance of this phraseology, the reader must bear in mind that Kant denies that a work of art, i.e., a machine of any sort, can properly be said to be organic or organized. In this doctrine most scientists would agree with him.

titative, — expressible by numbers, — leading, it must be added, directly into that inexorable reign of law which so many gentle people regard with dread.”

In one aspect, as we have said, the intent of these preliminary movements is not very obvious; but in another it is clear, that they are designed to prepare his hearers for the conclusion to which he directs every position of his subsequent argument, — that the universe of matter and spirit, including, as he concedes, the phenomena of moral conviction and feeling, as also of religious emotion and religious faith, is in every process and manifestation subject to no other than mechanical laws.

Thus far the movements have been preliminary. The author begins the argument proper with a theme very familiar to himself; viz., the correlation of physical forces. He traces the growth of this theory from the first felicitous conjecture to the demonstrated conclusion. He illustrates it by the relations of heat to mechanical work, and their mutual interchange, in examples with which the readers of his other essays and lectures are entirely familiar. He considers next the analogous interchange of decomposition and combustion in the use of the galvanic battery for chemical results; illustrating by several examples the truth that chemical elements, say hydrogen and oxygen, which are united in combustion at one point in the circuit, are liberated in exact equivalents at the other. Having taken two steps in his argument, he essays a third, and suggests that the same process under similar laws may go on in the body of man. Having demonstrated that heat is interchangeable backwards and forwards with mechanical energy in mathematical equivalents, and that combustion involving heat is in like manner interchangeable with chemical decompositions, he abruptly

asks, "Is the animal body, then, to be classed among machines?" The friction-wheel or the galvanic battery only distribute force,—transferring it from one point to another, and varying its manifestations to the senses,—but never creating it. Does the animal body do any thing more? "When I lift a weight, or throw a stone, or climb a mountain, or wrestle with my comrade, am I not conscious of actually creating and expending force?" The ingenuity of thus putting his case is altogether admirable. It is as though he had said, The question whether the body is or is not a machine must be decided by the question whether it is capable of generating muscular or mechanical energy. The man who asserts that it only transfers force must own that it is a machine: the man who denies that it is a machine must hold that it can of itself generate, i.e., originate, muscular force. The tyro in logic would recognize the possible fallacy which may lie in the major premise of Mr. Tyndall's disjunctive syllogism. Even did he know little about the subject-matter, he might at least be wary enough to say, I am not prepared to say that A is either B or C; for it may possibly be either B, C, or $C + D$. That is, the human body may be something else than either a generator or a transmuter of force,—it may, perhaps, perform other offices than a friction-wheel or a galvanic battery. Whether Mr. Tyndall does not himself concede this a little farther on, we shall ask in due time. But Mr. Tyndall, having shaped his major premise to suit himself, proceeds to discuss the minor premise by asking whether the human body originates, i.e., generates, mechanical force. He answers his own question by an elaborate and varied series of illustrations, all of which are designed to show that mechanical force and heat and chemism are related to one another in the human

body precisely as in the use of the friction-wheel or the voltaic battery ; i.e., that eating and breathing are simply more refined forms of combustion and decomposition, with which heat and motion are correlated. "All this points to the conclusion, that the force we employ in muscular exertion is the force of burning fuel and not of creative will." "The body, in other words, falls into the category of machines." "The matter of the human body is the same as that of the world without us, and here we find the forces of the body identical with those of inorganic nature. Just as little as the voltaic battery, is the human body a creator of force. It is an apparatus exquisite and effectual beyond all others in transforming and distributing the energy with which it is supplied, but it possesses no creative power." We have no disposition to dispute this. We concede, that so far as *the production of muscular power* is concerned, and its transmutation into heat, all this may be true. We question very much, indeed, whether the experiments have been conducted with mathematical exactness, or whether the laws have been formulated with scientific precision, or, as Tyndall phrases it, whether "the interdependence" between the several factors has "become quantitative, —expressible by numbers." But making nothing of this, and conceding that the law of conservation and correlation of muscular force operates as Mr. Tyndall contends, we cannot but inquire whether the human body performs no other offices than these two ; i.e., whether all the functions of life are resolvable into digestion, breathing, walking, climbing, and lifting weights? Mr. Tyndall himself, it would seem, more than half suspects that his machine does something more than transmute force by eating and breathing. After having said, "Thus far every action of the

organism belongs either to the domain of physics or chemistry," he bethinks himself that the nerves have something to do with the application and direction of force, if not with its generation. These are sensor and motor. But these do not create force,—they do not originate energy,—they simply *direct* it, "as Mayer says, with *admirable lucidity*: as an engineer by the motion of his finger in opening a valve, or loosening a detent, can liberate an amount of mechanical energy almost infinite, compared with its exciting cause; so the nerves, acting on the muscles, can *unlock* an amount of power out of all proportion to *the work done by the nerves themselves*. The nerves, according to Mayer, pull the trigger; but the gunpowder which they ignite is stored in the muscles. This is the view now universally entertained." We pass over the concession that has inadvertently dropped from the lips of our author, that work of some sort is done by the nerves themselves, which he had not noticed, and certainly has not shown to be the accumulation or transmission of some occult transformation of heat. We simply observe, that according to Tyndall and Mayer, and all the scientific world, a special function is accorded to the nerves,—over and above any which the correlation of forces can illustrate, by either mechanical law in the machine, or chemical decomposition in the battery,—and this is a function of directing, i.e., of liberating and detaining, muscular force; which is illustrated by lifting a valve or pulling a trigger. It were far better illustrated, as it seems to our unsophisticated minds, by the power of a band or gearing to carry motion in a machine, or of a wire to transfer potential motion or potential heat in a battery. It is very evident, that when Mr. Tyndall began his argument, which was to prove that "the body falls under the category of machines," and that

as a machine it generates no force, he does not seem to have thought of any other function as possible except the two,—of generating or transforming force. Not seeing that his animal body, his *homme machine*, does through the nerves perform the additional functions of directing or transferring force, that is, of determining when and where it should act, it is not surprising that he meets this indefinitely conceived demand by the convenient image or picture of a valve, a detent in a machine, or a trigger in a musket. He ought to have bethought himself, and corrected the premises of his disjunctive; and, instead of asserting the animal body either creates force or transforms force, he should have said, the human body either creates force, or transforms force, or also directs force. Then, in order to prove that it is a machine, he must prove that it directs force through the nerves, by either mechanical or chemical agency. This last he does not attempt to do. He does, indeed, assume that nerve substance is wasted by use, and implies that heat is probably evolved in nerve activity, and illustrates this by a rod of antimony, rendered sensitive by electrolysis, as it carries forward heat and smoke from one end to another. From this he would doubtless leave us to infer that the nerves, like the muscles, never act, except under the general conditions of correlation. But in all this there is not the slightest attempt to explain by what mechanical process the nerves *direct* or *transfer* motion. He does, indeed, tell a somewhat long story about experiments which show that the process of movement or other change in the nerves, sensor, and motor, to and from the brain, requires an appreciable lapse of time, so that a second must elapse before a whale seventy feet long would feel a wound in his tail; but he is sublimely unconscious of the fact, that the new function of shifting motion, by

valve, detent, or trigger, during this second, makes the machine somewhat more complicated than he had at first supposed. But, this slight difficulty not having occurred to him, the animal body is accepted as a finished machine, which is now ready for the "kindling of consciousness;" and this he confidently anticipates may turn out to be a more refined form of heat evolved by mechanical laws. With this impression, he marches boldly up to the new line of inquiry, which relates to the connection between this machine and a highly poetical or idealized force, sometimes called the soul. To say nothing of these little difficulties, which have hindered us from going forward with him at the rapid pace which he has assumed, there are others, which also compel us to follow him *haud passibus æquis*. We are not satisfied that he has disposed of sundry other questions which may be asked in respect to the "animal body." Conceding, that, in breathing and eating and muscular action, this body is a machine or a voltaic battery, and not insisting on the peculiarity of the function by which the nerves transfer or liberate motion, which Mr. Tyndall has scarcely recognized and imperfectly explained, we hold that this body performs other functions, which the doctrine of the conservation of force does not at all account for, and which are not proved to be mechanical by Mr. Tyndall's argument, or the analogies which it suggests. We need only refer to these. This body grows by a peculiar method, through cellular accession from within, from living food, making thereby new and peculiar tissues in great variety. Many of these tissues become organs which are capable of secreting special fluids or substances, which themselves pass by an orderly succession into the various permanent substances of the body. Each organ secretes that which finally returns to itself, in-

creasing its bulk, following its form, and fitting for its function. These parts grow after a plan, which is general in likeness of form, size, and symmetry, so far as it is common to all living bodies, special so far as it is peculiar to each species, and individual so far as it is fitted to each individual. Not any one of these effects has ever been accounted for by the joint operation of any known mechanical or chemical laws, much less by their sole or separate activity; least of all with the slightest approximation to that mathematical rigor which Mr. Tyndall contends is the indispensable requisite of scientific certainty. All that can be said has been said by Mr. Tyndall, that so far as heat and muscular activity are concerned, there is probable correlation between the two; that in living matter, as truly as in inorganic matter, the combinations in growth and the decompositions of waste are chemical in their ingredients and chemical in their relations. This is not surprising: did not the living body consist of materials which obey mechanical and chemical laws, this body would so far not be material. This is not at all in question; and, so far as a correct conception of an animal body is concerned, it is superfluous to argue the point. What is in question is, whether this body is capable of no other functions than these, not whether it is a machine or a voltaic battery, but whether it is not something more. The question is, not whether so far as it is material it is subject to material laws, but whether it is not also a living body, and what forces, relations, and laws the conception of life implies.¹

¹ Since writing the above, we happened to open the often-read discourse of Du Bois Reymond, of Aug. 14, 1872, *on the limits of the knowledge of nature*. On p. 26, speaking of a supposed ideal knowledge of the physiological processes, analogous to our actual knowledge of astronomical movements and laws, he says, In that case, "muscular contraction, glandular secretion, electrical pulsation, optical illumination,

What is most surprising is, not that a certain class of scientific men do not see this distinction, but that so many insist in one breath, that no scientific theory can be accepted which is incapable of mathematical formulization and experimental verification, and in the next breath adopt a theory of life on a mechanical and chemical basis, the laws of which they do not profess to have formulated in numbers, nor to have tested the alleged facts by experiment. Mr. Tyndall insists that "the interdependence of our day has become quantitative,—expressible by numbers,"—and that, where law cannot be formulated by numbers, there is no science. We insist, that if, under this definition, psychology, morals, and theology are excluded from the domain of science, physiology should be excluded also; and yet the whole doctrine of development, with heredity and its variations and integrations, and all the nomenclature by which the soul is demonstrated to be but a higher potency of matter, and personality to be an ideal fiction, and God an entirely superfluous hypothesis, is derived from the very operations of life, scarcely a single one of which, if tried by the criterion in question, has been scientifically fixed or formulated.¹

ciliary movement, the growth and chimism of plant-cells, the impregnation and development of the egg, all these *now hopelessly dark processes*, would then be as transparent as the movements of the planets." It would seem that these processes are no longer dark to Professor Tyndall's illuminated vision.

¹ Professor Tyndall asserts not infrequently, with unqualified positiveness, that science ceases where mechanical relations cannot be mathematically determined. He objects to any scientific recognition of the phenomena of spirit, in such language as this: "If we are true to these canons, we must deny to subjective phenomena all influence on physical processes. Observation proves that they interact; but, in passing from the one to the other, we meet a blank, which mechanical deduction cannot fill." He seems to overlook the fact, that, tried by this test, physiology itself, as conceived by the great majority of its devotees, is as little a science as psychology. His own conjectures, that the animal body is a machine, are as far from any mathematical formulization as

But leaving this consideration, and conceding for the moment all that Mr. Tyndall violently and unscientifically assumes, viz., that the animal body is a machine, let us follow him up to the line where its supposed relations to the soul begin. We accept the case suggested by himself: "An aerial wave, the energy of which would not reach a minute fraction of that necessary to raise the thousandth of a grain through the thousandth of an inch, can throw the human frame into a powerful mechanical spasm, followed by violent respiration and palpitation." We give the illustration which he quotes from Lange: "A merchant sits quietly in his chair; he reads a letter; it makes him spring to his feet; he calls his carriage, gives orders in haste to all his clerks and servants, rushes on 'Change, buys and sells, and signs a few papers, and in a half-hour has saved his fortune from wreck; he comes back, and, throwing himself into his chair, says, 'Now I can breathe.'" "This complex mass of action, emotional, intellectual, and mechanical, is evoked by the impact upon the retina of the infinitesimal waves of light coming from a few pencil-marks on a bit of paper." "What caused the merchant to spring out of his chair? The contraction of his muscles. What made his muscles contract? An impulse of the nerves which lifted the proper latch, and liberated the muscular power. Whence this impulse? From the centre of the nervous system. But how did it originate there? This is the critical question." It is, indeed, the critical question. And how does Mr. Tyndall answer it? We should first

the not dissimilar theory of Descartes. The psychological theories of the school of Herbart are more solidly and consistently mathematical than are the headlong guesses of Professor Tyndall's physiology. Tried by Tyndall's test, the new chemistry is also in some danger of being pronounced unscientific. See Du Bois Reymond. — *Ueber die Grenzen des Naturerkennens*, pp. 4, 5.

inquire, how does he ask it; for it is important to notice, that as with lawyers, so with philosophers, it often happens that the way in which they phrase their questions reveals the answers which they expect or desire, and in some sort compel. Mr. Tyndall does not deny that other phenomena come in besides those of the ordinary nervous, digestive, and breathing mechanism. He admits that terror and hope, sensation and calculation, before impending ruin, all succeed one another between the impact on the retina and the lifting the latch which releases the last re-action which proceeds from the centre of the nervous system. But he assumes, that, whatever is the nature of these phenomena, they are caused by the impact of the undulating light upon the responsive retina, that this imparts another impact to a somewhat causing terror, which in its turn, by another stroke or impact, is transformed into hope, till at last the latch is lifted, and the muscular power is set free. This assumption concerning all these processes resolves them into mechanism, and subjects them to the law of necessity. It takes for granted, that whatever the soul may be, whether it is a set of friction-wheels or a voltaic battery, whether brain or a poetical expression for an ideal x , its phenomena are caused at first by the impact of a material object, and follow in succession according to mechanical necessity. Every thinker should earnestly protest against every such assumption as this, and the language which asserts or implies it. The true and wary philosopher should say just at this point, I do not accept your version of these intervening phenomena: they are in no sense evoked by the object striking upon the man, but they are performed by the man with reference to the object. It is not the letter which strikes its impacts upon the man; but it is the man who reads the letter, and thereafter acts in calcula-

tion and hope until the latch is lifted and the muscular motion is set free. We know that this view is very strange to Mr. Tyndall's method of philosophizing, and is fatal to all his conclusions; but, in our view, it is true to the facts: and we must protest against this stealthy, if it be an unconscious, way of disguising the facts by the mode of asking the question, Whence the impulse, and how did it originate, that directs or liberates motion in the various methods so vividly described? This is, indeed, the critical question. It is none other than whether there is any other agent than matter, and whether this agent, be it material or aught besides, acts according to mechanical laws and under mechanical necessity? How does Mr. Tyndall answer this question? He remarks first of all, "The aim and effort of science is to explain the unknown in terms of the known. Explanation, therefore, is conditioned by knowledge." This truth he proceeds to illustrate by the story of a German peasant, who, when he saw a locomotive for the first time, having never known any other than animal power, after long reflection solemnly said, "*Es müssen Pferde darin seyn!*" ("There are horses inside!") The story, in Mr. Tyndall's opinion, illustrates a deep-lying truth. It strikes us, that the deep-lying truth which Mr. Tyndall finds in it admits of an application of which he was not fully aware, or he would scarcely have introduced the story. Had the peasant known no other locomotive-power than that by horses, he had reasoned wisely, provided the peculiarity of the effect was not fitted to awaken the suspicion that there were more things in heaven and earth than were dreamt of in his philosophy. Otherwise his confident dogmatism should be ascribed to his stolid incapacity or his narrow positiveness. We certainly see no objection, if Mr. Tyndall feels none, to his recognizing in the peasant the

ideal of a true philosopher, and placing himself by his side, as one who, like him, can only interpret the unknown by the known. When Mr. Tyndall insists that all the functions of the animal body can be explained by mechanical or galvanic agency, he seems to us to say, *there are horses inside*. Motion and heat, and breathing and eating, are the forces which I recognize and believe in; and these are the only forces which I accept. Were the German peasant told of steam and its expansive power, of its capacity of quick generation by heat and of condensation, and were there shown to him the steam-boiler and the furnace, he would doubtless say, The force and the laws of which you speak are both to me unknown, and I can only explain the unknown in terms of the known. Similarly when the attention of Mr. Tyndall is directed to the activities of spirit, he replies, All these are practically unknown to me, for I believe in nothing except the mechanics of friction or the voltaic battery. That is to say, if we know or could know any thing about terror and hope and calculation and resolve, and all the other phenomena that were evoked between the first impact of the light, and the re-action on the muscles, we might explain the intervening phenomena; but, inasmuch as we cannot, we must assume that they do not exist. They are to science a set of unknown quantities, which have no claims to be scientifically recognized, and can neither explain other phenomena nor be explained themselves. Mr. Tyndall, by his subsequent concessions, is far less excusable and far less philosophical than his associate philosopher. For Mr. Tyndall is frank enough to say that there are *peculiar* phenomena (he does not say there is a force), such as terror, hope, sensation, calculation, etc., which are associated with or attendant on the molecular motions set up by the waves of light in a

previously prepared brain. But he denies that there is any causal connection between them. He rejects the explanation given by Mr. Bain, once partially admitted by himself, that the two are objective and subjective sides of the same phenomenon. He repeats, however, his position, that the reason why we cannot unite them in a causal connection is, that while we can form a coherent picture of physical processes, as the stirring of the brain, the thrilling of the nerves (a new idea), the discharging of the muscles (previously the lifting of a latch), we can form no picture of a molecule producing a state of consciousness, or of a state of consciousness acting on a molecule. Physical science offers no justification for either of these connections, the ordinary canons of science fail to extricate us from our difficulties, and therefore we conclude that there can be nothing but horses inside the locomotive. Even the facts, as terror, hope, calculation, etc., are almost as difficult to seize as the idea of the soul as their cause. But, "if you are content to make your soul a poetic rendering of a phenomenon which refuses the yoke of ordinary mechanical laws, I for one would not object to this exercise of ideality."

The reader will be able by this time to form some idea of what Mr. Tyndall intends, when he says that the phenomena of the soul, the soul itself, the possible action of matter on the soul, and of the action of the soul upon matter, are facts and phenomena which are scientifically unknown. They are unknown because they cannot be pictured to the mind; i.e., united in a mental picture with one another or with physical facts. If by picturing the soul or the mind is intended that it cannot be pictured as occupying space and as affecting the bodily senses, i.e., cannot be imagined as material substance, this is true; but, if it is contended that the

mind cannot be pictured as the mind finds itself in its own operations, then it is untrue; and that it is untrue is affirmed by Mr. Tyndall himself every time in this discourse he says I see, or know, or remember, or believe. If he means that he cannot picture the mind *as acting*, we reply he can picture the acting of the mind as truly as he can picture the acting of the body. If he attempts to picture what he means by force, whether galvanic or mechanical, he will find this as difficult as when he attempts to picture mental force. If he cannot picture mind as acting on matter, or matter acting on mind, no more can he picture matter acting on matter. If he says that he knows nothing about mind, and that therefore psychical existence and psychical action cannot be used to explain any phenomenon, because this would be to explain the unknown by that which is more unknown, he refutes himself every time that the word *to know* escapes from his lips. The brilliant essay by Mr. Tyndall himself, "On the Scientific Uses of the Imagination," and the many sagacious and brilliant remarks which he has made from time to time upon the processes and grounds of induction, are themselves decisive evidences that many phenomena in his own mind have been well considered by himself and causally connected. The entire Theory of Modern Science, in which he so much glories, and which in so many respects he so well understands, and expounds so skilfully, is an exposition of the operations of an agent within that body, which, for the sake of scientific consistency, he calls a machine. If this agent or force within is nothing more than an idealized abstraction, this abstraction discoursed most eloquently from the chair of the Midland Institute on the 1st of October. Again: If we know nothing about the knowing process or the knowing agent, then what confidence have we in what it knows of matter? If

physical science and its methods are to furnish bounds to what we know, and to impose law as to how we are to know it, then we know something about the spiritual activity which we call knowledge, and the agent which exercises its functions. To say that the only species of existence which this agent can know is matter and its laws, and that every kind of activity which we can explain must be explained by material relations, or the so-called methods of physical science, is to beg the question to begin with; but, in the very terms in which we beg it, we assume that that function which we call knowledge has supreme authority, and gives law and authority to itself, and to the science which it creates.

But here Mr. Tyndall takes another step in advance. He graciously concedes to those who desire to do so, the liberty to think and speak of the soul as the poetic rendering of peculiar phenomena when abstractly conceived, provided only that they will admit, that, in all these phenomena, it obeys the laws of necessity which rule in the world of matter. This, indeed, is the last point which he makes; and upon this he dwells at very great length. He introduces the discussion by saying, "Amid all our speculative uncertainty, there is one practical point as clear as the day; namely, that the brightness and the usefulness of life, as well as its darkness and disaster, depend to a great extent upon our own use of this miraculous organ;" i.e., the brain. This means, that, whether we are spirit or no, it is certain we are brain, and what we are and what we become depend upon the use or abuse of this organ. But does not this imply that we are free? for, if we are not free, how can we be responsible? Here "we stand face to face with the final problem. It is this: Are the brain, and the moral and intellectual processes known to be associated with the brain, . . . subjected to the laws which we find

paramount in physical nature?" To this inquiry he gives the following as his answer, in a rambling series of remarks, which we shall seek to follow and condense as best we may.

First, he observes, that Fichte recoiled from the thought of necessity in a well-known volume which records the struggle between his head and his heart. His recoil was so violent, that, rather than subject man to nature, he made nature subject to man; creating nature out of the free actings of the spirit. But all men do not share in this recoil of Fichte. Even Bishop Butler teaches, that, so far as human conduct is concerned, the theories of free will and necessity bring us to the same practical issue. But even free will cannot imply the production of events without antecedents. Free will must be consistent with reasons. And, on the other hand, the voice of this united assembly would say that I can lift my arm if I wish to do so. The wish, then, or, if you please, the man, is the decisive element. But what and whence is the wish or the man? At the starting of this question Mr. Tyndall falls back upon the axiomatic affirmation with which he began. "As stated at the beginning of this discourse, my physical and intellectual textures were woven for me, not by me. Processes in the conduct or regulation of which I had no share have made me what I am. Here surely, if anywhere, we are as clay in the hands of the potter." The age finds each man to be the product of all the ages before: it will make of us what the combined forces of all the present can make out of that past added to this present. Robert Owen's doctrine, that man is the product of circumstances, was correct if you count the past circumstances along with the present. Every court of justice makes allowances for hereditary tendency to insanity. An acute governor of one of the

largest prisons in England informed Professor Tyndall that he should divide all prisoners into three classes, — the good, who ought not to have been convicted; the hopeful, who, under more favorable training, may be moulded to something good; and the hopeless, who might as well be “put compendiously under water” as tortured with punishment of any kind. The observations and testimony of such men with individuals are, however, of little significance compared with Darwin’s speculations, which have at last convinced even “the clerical world,” that “the progenitors of this assembly,” when traced very far into the past, “could not be called human.” “These changes, to which each generation adds its slender contribution, are owing to what we in our ignorance are obliged to call ‘accidental variation,’ and secondly, to a law of heredity, in the passing of which our suffrages were not collected.” That the process is one of amelioration is ascribed by Matthew Arnold to “a power not ourselves which works for righteousness,” “when with characteristic felicity and precision he lifts the question into the free air of poetry, but not out of the atmosphere of truth.” But does not this law of progress under hereditary influences give free sanction to crime by removing all exposure to punishment? Not in the least. Society says frankly to the unfortunate inheritor of irresistible proclivities to evil, We must imprison or hang you, that we may give greater energy to the tendencies against evil, if not in you, at least with other men, even though we accept with Darwin the doctrine of accidental variation as well as of fixing environment. “Practically, then, as Bishop Butler predicted, we act as the world acted when it supposed the evil deeds of its criminals to be the products of free will. We even continue to preach, for the preacher’s words of enlightenment and

courage and admonition enter into the list of forces employed by nature for man's amelioration ;" as the speaker himself remembers to have been helped by George Dawson thirty-two years ago, as he exhorted to industry and self-control, "when he made himself the mouth-piece of Nature, which secures advance by the encouragement of what is best." Last of all, will not all religious or theological influences be enfeebled by this theory? will not society be given over to demoralization and crime? Not in the least; for even George Holyoake, avowed atheist as he is, preaches against low views of life, and incites to the higher ends and aims of civilization and character. It is, however, a serious mistake to suppose that theologic belief has been a very potent element in working for man's amelioration. Very many fundamental differences of character "depend upon primary distinctions of character, which religion does not remove." Faraday, whom he describes in a passage of elaborate eulogy, added since the address was originally written, though depending upon his Christian and even his Sandemanian tenets for his spiritual life and comfort and peace, was singularly like Charles Darwin, "who neither shared the theologic views nor the religious emotions which formed so dominant a factor in Faraday's life." "Facts rather than dogmas have been the ministers" of the power not ourselves working for righteousness, "hunger and thirst, heat and cold, pleasure and pain, sympathy, shame, pride, love, hate, terror, and awe;" and yet "it cannot be denied that the beliefs of religion, including the dogmas of theology and the freedom of the will, have had some effect in moulding the moral world." "Granted; but I do not think that this goes to the root of the matter. Are you quite sure that these beliefs and dogmas are primary and not derived, — that

they are not the products instead of being the creators of the moral nature?" In support of this view he refers to Carlyle, and quotes a familiar passage from one of Emerson's poems, both to the effect that religious faiths and rites are the products rather than the creative factors of this moral nature. He ventures to ask, "Does the song of the herald angels, 'Glory to God in the highest, and on earth peace, good will towards men,' express the exaltation and the yearning of a human soul, or does it describe an optical, acoustical, fact,—a visible host and an audible song?" "If the former, the exaltation and the yearning are man's imperishable possession." "If the latter, the belief in the entire transaction is wrecked by non-fulfilment."

This furnishes the argument, if argument it may be called. The conclusion is summed up as already quoted: "Thus, following the lead of physical science, we are brought without solution of continuity into the presence of problems, which, as usually classified, lie entirely outside the domain of physics. To these problems thoughtful and penetrative minds are now applying those methods of research which in physical science have proved their truth by their fruit. There is on all hands a growing repugnance to invoke the supernatural in accounting for the phenomena of human life; and the thoughtful minds just referred to, finding no trace of evidence in favor of any other origin, are driven to seek *in the interaction of social forces the genesis and development of man's moral nature.*" The careful reader will observe in these concluding words the affirmation for the first time in any of Mr. Tyndall's writings, of the tenet that moral distinctions are the product of social agencies. That he must of necessity hold this opinion was clearly enough to be seen by any one who follows the logic of Atheistic Evolutionism, to which

Professor Tyndall professes that he has been led with so many other thoughtful minds by scientific necessity.

We have endeavored to trace the successive steps by which Mr. Tyndall declares that he has been led to these conclusions. We have carefully stated his points, that we might candidly judge of the logical coherence and convincing force of the facts and analogies by which, "following the lead of physical science," he has been brought first to face these problems, and then to solve them in these appalling answers: Negatively there is no spirit, no freedom, no God, and no immortality; and positively the scientific and practical explanation of the past, and the promise of the future, lie in a blind force working under the law of progress for man's amelioration, as the result of whose workings the idea of moral good is in due time developed, in whose name law is administered without justice. Morality as a social product creates religion, which rules by relentless force without personal sympathy. As the result of the new solutions of these old problems, according to "those methods of research which in physical science have proved their truth by their fruit," we are told that "social duty will be raised to a higher level of significance; and the deepening sense of social duty will, it is to be hoped, lessen, if not obliterate, the strifes and heart-burnings which now beset and disfigure our social life."

The argument which we have analyzed consists of four divisions. Of these divisions the first recapitulates the history and evidence of the conservation and correlation of force in the domain of physics. In this argument Professor Tyndall is at home. His statements are clear, his examples are pertinent, and the experiments are manifold. We will admit that the argument is decisive, without interposing a single one of the ex-

ceptions which we should reserve, were the case to be tried before another tribunal. The second division is that in which he argues that the animal body is a machine, which is controlled by those forces and only those forces, and obeys those laws and only those laws, which are found in the inorganic sphere. This argument seems to us obviously defective, in that it omits many of the phenomena which are most characteristic of the animal body, and transfers analogies from one physiological function to another, with an intellectual haste and audacity which are utterly foreign to the methods of physical science, or indeed of any science, whether pure or applied. The third division declares that all those phenomena commonly called psychical should be treated by the scientific man as utterly unknown,—as incapable themselves of being explained by any other than material forces and laws, and of being stated in any other than figures of poetic ideality. This position he does not argue. He simply begs the conclusion, and not only this, but he dishonors science itself by this very assumption, because he dishonors the agent which is the creator of science, and by its own sovereignty is the lawgiver of science, imposing upon its own work the methods of procedure, and declaring the manifold services, Mr. Tyndall himself being witness, which theory, question, imagination, and experiment have contributed towards its triumphs. Moreover, he asserts that the soul, though potent and sovereign in these creations, is nothing but an idealized abstraction; although, when he forgets his theory, he himself gives fervent and eloquent testimony to the spiritual light and comfort and peace of his great teacher Faraday, and the simple and sturdy honor of “Mr. Charles Darwin, the Abraham of scientific men,—a searcher as obedient to the command of truth as was the patriarch

to the command of God." The fourth division consists of the rambling and somewhat incoherent argument, which we have endeavored to condense, upon the higher themes of man's responsibility to himself, his fellow-men, and to God. In all this part of the discourse there is not the slightest suggestion of the methods of induction or experiment, such as are pursued in physical science. There is not a single example of those analogies which open to the sagacious interpretations of scientific genius glimpses of a brilliant speculative theory. The author gathers the scraps of his readings and the shreds of his reflections in literature and theology, and sets them forth with no force except such as startling paradoxes always obtain when they fall from lips as eloquent as those of this attractive speaker. All recognition of the methods of physical science seems to have departed from his memory. The four divisions of the argument are held together by the foregone conclusion of the author, that the devotee of science may recognize nothing in the universe but matter and fate and evolution, and requires for the explanation of the existence and history of this universe neither intelligence nor goodness.

In the first of these divisions, Professor Tyndall writes as a *physicist*. As a physicist he never fails to be clear, consistent, and eloquent, even when he is not convincing. In the second he is a *physiologist*. Here he is limited in his recognition of vital phenomena, and committed to the foregone conclusion, that life can be explained by mechanism. In the third he is a *psychologist*. In this rôle he is a sturdy materialist in his reasonings, and a poetical abstractionist in his concessions. In the fourth division he is a *moralist, metaphysician, and theologian*. As a moralist he accepts the hard theory of Hobbes as made flexible by Darwin

and Spencer. As a metaphysician he is a fatalistic evolutionist with a dash of imaginative optimism. As a theologian he is a sentimental atheist or an imaginative agnostic. In each of these several capacities he dexterously shifts from one phase to the other of his sensitive many-sidedness of opinion and phraseology, according to the varying needs and aspects of his argument and his audience.

We have read many things from Professor Tyndall, with sincere admiration for the sagacity of his insight, the skill of his expositions, and the splendor of his generalizations. We must confess, that, in the perusal of this address, our admiration has passed into wonder, and our wonder into astonishment. If this is science, then science has ceased to be scientific. No man has insisted more energetically than Professor Tyndall upon the necessity of mathematical formulization to fix whatever laws are surmised, and of rigid experiment to test and confirm the most plausible of generalizations. In this address, he seems to us to have forgotten to exemplify the first article of his own philosophic creed, and to have wholly failed to apply the tests of experimental verification.

As we have read the occasional addresses of Professor Tyndall with unabated interest, and noticed that they have usually represented the results of the meditations of his summer holidays, we have learned to conceive of them as the romantic essays of an imagination surcharged with the ferment of philosophical speculations, and kindled to a midsummer excitement by the glow of his inward fervor. We have been more than once reminded of similar utterances of the philosophic Hamlet, as he also mused upon Science and Man: "I have of late foregone all custom of exercises; and it goes so heavily with my disposition, that this goodly frame, the

earth, seems to me a sterile promontory ; this most excellent canopy, the air, look you, this brave o'erhanging firmament, this majestical roof fretted with golden fire, — *why, it appears no other thing to me than a foul and pestilent congregation of vapors.* What a piece of work is a man ! how noble in reason ! how infinite in faculties ! in form and moving, how express and admirable ! in action, how like an angel ! in apprehension, how like a god ! the beauty of the world ! the paragon of animals ! *And yet, to me, what is this quintessence of dust ?* ”

In common with many others in this country, we have not only admired Professor Tyndall as a philosopher, but have been delighted with him as a kindly and courteous gentleman, and welcomed him as a friend. The friendly interest which we still retain for him only deepens our regret that he should have been misled so far as to mistake the brilliant analogies of a teeming imagination for the sober verities of scientific truth.

VIII.

PHYSIOLOGICAL METAPHYSICS; OR, THE APOTHEOSIS OF SCIENCE BY SUICIDE.¹

A PHILOSOPHICAL MEDITATION.

THE phrase Physiological Metaphysics is selected for precision only, because no other term expresses our meaning so well. We do not intend by it any single or special science, as when we speak of the science of mechanics, or optics, or chemistry, or geology, or of any other subject-matter, whether physical or psychical. Nor do we use the word collectively for the systematized or interpreted knowledge of several classes of objects, as when modern science is spoken of, and usually though improperly made to include only those sciences which have matter for their sphere. We believe most fervently in science, in each and all of these senses; we rejoice in its progress; we confide in its methods, and are in no sense afraid of the direct or indirect results of any of its discoveries, whether they relate to man, the universe, or God. Moreover, we loyally accord to it independence and supreme authority within its sphere.

Nor do we intend by it physiological science, or that science which has life and living beings for its sphere of inquiry. This science we most delight in of all the sciences of nature; finding that the scientific study of life is the best preparation for, and the best introduction to, the study of the soul, inasmuch as it effectually

¹ The Princeton Review, November, 1878.

disciplines man to do justice to psychical phenomena and the beliefs and relations which they involve, by first confronting him with the mysteries of life, and thus preparing him for those higher phenomena of conscious experience and activity from which they are yet sharply distinguished.

We would not be suspected for a moment, by the use of this phrase, of throwing any discredit upon metaphysics proper; which term, and the science which it designates, both need all the good words which can be said of them in the evil days of criticism and disesteem on which they have fallen in many so-called scientific circles.

We believe in metaphysics or philosophy, both in the narrow and the enlarged conceptions of the same, whether the words signify the conceptions and principles which must be assumed as the foundations of every special science, or whether they stand for a still more extensive sphere of truths concerning man, nature, space, time, and God, which are partly necessary and partly inductive. We would not, therefore, be understood as calling in question metaphysics as such, or of availing ourselves of any general disesteem in which this term is often used, to the damage of that form of speculation which we have in mind, and which is properly termed metaphysics by eminence.

Our theme is *Physiological Metaphysics*. We call this science metaphysics because it proposes a system of ultimate formulæ for the explanation of the origin and history of the universe, and uses the same as the foundation for our scientific knowledge of the same. We call it *physiological* because the special science of physiology has furnished its distinctive conceptions and principles, and fixed its terminology. Its representatives and defenders have stigmatized much of the

current metaphysics as theological, on the assumption, that in some sense it had illegitimately borrowed its principles and methods from positive or Christian theology. With much greater propriety we may use the phrase physiological metaphysics as a system in which physiological relations are made supreme, and for which, to a large extent, they have furnished the terminology. We certainly do not object to the recognition of physiological conceptions within the domain of metaphysics. Every science, so far as its subject-matter is unique, and furnishes conceptions and relations which are peculiar to itself, must have what we may relatively call a metaphysics of its own. Accordingly, we speak with entire precision and propriety of a mathematical, a chemical, and a physiological metaphysics. Used in this sense, the term has a legitimate signification. Nor do we in the least except against the recognition of development or evolution as a legitimate conception or law of any class or sphere of phenomena, so far as its presence and agency are sustained by observation or verified by experiment. The true philosopher will as rationally and as readily believe in development or evolution, either as a force or a law, as he will believe in mechanical adhesion or chemical combinations, or the laws which govern either. He will not even object to the explication of any number of phenomena by means of evolution, provided the evidence for this application is satisfactory, and the experiments are decisive. Nor will he object to relying on analogy as a ground of believing in evolution beyond the range of observation or experiment, provided the data of facts are sufficiently numerous, and the analogies compel to this sole conclusion.

It is only when *evolution*, or development, is taken out of its definite and legitimate applications within the

domain of life, and extended to every description of beings and phenomena, from the inorganic on the one hand to the self-existent on the other, that we question the warrant for applying the relation so widely, and to a subject-matter from which it is wholly foreign. That a form of metaphysics is current, which, in the sense defined, may properly be called physiological, cannot be questioned by any person who is superficially acquainted with the philosophizing of our times. Its growth has been rapid; and its development has been, to use its own favorite imagery, almost as sudden as was the first rushing of star-dust into the first solid orb. The elements of which it is composed are singularly incongruous, and the writers who have contributed to its popularity and its acceptance are strangely unlike. Some of the principles and philosophies which it has contrived to subdue to its own vital power are seemingly irreconcilable; and yet they all have been gathered somehow into a common school of thought, which is regarded by many as mechanical, materialistic, and atheistic on the one hand, while it claims on the other to do full justice to the phenomena of spirit and the mystery of the Infinite. The menstruum which it employs as a solvent for these apparently unrelated and intractable elements, is its doctrine of life. Whatever may be the defects or incongruities of this bold and sweeping theory, whatever are the dangers it brings to faith and morals, to social order and religion, it partially hides by the elevated associations which the mystery of life never fails to suggest. Development and evolution have become terms convenient for the enchanter or juggler to conjure with in the haunted caves of metaphysical subtlety; and it would seem at times as though, whether it be by enchantment or jugglery, the first victim of either is usually the operator himself.

The writers who have most effectually contributed to the maturity and exposition of this system are James Mill the father, and John Stuart Mill the son, Alexander Bain, John Tyndall, Thomas H. Huxley, Charles W. Darwin, Herbert Spencer, George H. Lewes, and John Fiske.

Besides these we ought not to overlook the crowd of naturalists, both the solid and romantic, who, having accepted the evidence for evolution within certain limits, are ready to extend it indefinitely over all regions of knowledge which are unfamiliar to themselves, or in their nature not easily grasped, and are content to make it the substitute for the absolute, the infinite, and the living God. Were we to assign to each of these writers we have named the element which he has contributed to this new metaphysics, and the agency which he excited, we must needs write a careful criticism and a philosophical history of the theories of each of these eminent men. It will be enough to say, that James Mill's bald and yet half-digested sensationalism ; John Stuart Mill's exposition of induction, and his Comtian theory of causality, together with his necessitarian and sociological ethics, and his doctrine of associationalism as contained in his criticism of Hamilton ; Alexander Bain's gross physiological cerebralism, and his thorough-paced associationalism, in which he surpasses even Stuart Mill himself ; Thomas H. Huxley's doctrine of protoplasm as the physical basis of life ; Michael Faraday's brilliant suggestion of the correlation of force, confirmed by numerous experiments on the part of careful followers, which has been so brilliantly expounded and so audaciously applied by the eloquent John Tyndall ; Charles Darwin's doctrine of the origination of species by the law of natural selection under the conditions of a favorable or hostile environment, and his doctrine of

heredity as subsequently enounced ; Herschel and Laplace's nebular hypothesis ; the Kantian doctrine of the relativity of knowledge as interpreted by Hamilton and applied by Mansel, — were all more or less distinctly before the mind of Mr. Herbert Spencer when he matured the romantic generalization by which he explains the generation of the universe of beings — mechanical, physical, spiritual — under the formula of development or evolution, and assumed for it a steady and continuous progress from the simple to the complex, attended by a constant tendency to integration, which gives relative permanency to its transitory phases. This law he makes to extend to every thing which exists and to every event which occurs ; to beings material, vital, spiritual ; to every occurrence or change which befalls them ; to the gathering of the cosmical masses, and the falling of a sparrow, to the suggestion of every thought, and the inspiration of every emotion. He extends it to the subtle relations which underlie all science, and declares that these are first evolved by manifold experiences, then hardened in the brain by the repeated blendings or consentient activities of many brain-cells, and finally transmitted as the necessary forms and regulators of the psychical, i.e., the cerebral, activities of subsequent generations. The system thus perfected has been expounded in more or less detail by not a few zealous disciples, who have now and then sought to apply it with greater confidence than their master. It has been accepted in part by some who would hesitate to assent to it as a whole, but who, nevertheless, confidently reason, as though the formula of evolution were the ready solution of many a problem, and find in continuity, heredity, and development the keys which open many a lock. It is not essential to follow it in detail in order to judge of its characteristic peculiari-

ties. We are only concerned to show that the metaphysics which makes such magnificent claims, and in one sense has reached such magnificent proportions, is essentially physiological in its fundamental conceptions. This is distinctly asserted by Mr. Spencer himself.

“And now let me point out that which really *has* exercised a profound influence over my course of thought. The truth which Harvey’s embryological inquiries first dimly indicated, which was more clearly perceived by Wolff and Goethe, and which was put into a definite shape by Von Baer, — the truth that all organic development is a change from a state of homogeneity to a state of heterogeneity, — this it is from which very many conclusions which I now hold have indirectly resulted. In ‘Social Statics’ there is everywhere manifested a dominant belief in the evolution of man and of society. There is also manifested the belief, that this evolution is in both cases determined by the incidence of conditions, — the actions of circumstances. And there is further, in the sections above referred to, a recognition of the fact, that organic and social evolutions conform to the same law. . . . The extension of it to other kinds of phenomena than those of individual and social organization is traceable through successive stages. . . . Afterwards there came the recognition of the need for further limitation of this formula; next the inquiry into those general laws of force from which this universal transformation necessarily results; next the deduction of these from the ultimate law of the persistence of force; next the perception that there is everywhere a process of dissolution complementary to that of evolution; and, finally, the determinations of the conditions (specified in the foregoing essay) under which evolution and dissolution respectively occur. The filiation of these results is, I think, tolerably manifest. The process has been one of continuous development, set up by the addition of Von Baer’s law to a number of ideas that were in harmony with it.”¹

This distinct avowal would decide the question, if any question were possible, that the relations which are characteristic of Spencer’s system are prevailingly physiological.

¹ Essay on Reasons for Dissenting from the Philosophy of Comte, appended to an Essay on the Classification of the Sciences (pp. 46, 47).

Whether Spencer's view of what life is, and of its genesis and conditions, may not be seriously defective, we shall not at present inquire. Whether he may not have formed an inexact and superficial view of development itself, as held by Goethe and Von Baer, or made an illegitimate and unauthorized application of the term as understood by them, we need not ask. It is enough for us to know, that the conception as at present employed was derived from the processes of life, and was originally limited to the sphere of organic existence. While we take Spencer as the representative of the extremest views, we are aware that multitudes agree with him in partially accepting the physiological metaphysics, who would shrink from making so bold an application of the principles which they involve. But we think it not unjust to subject to the same test the principles which they all hold in common.

This system claims to be the apotheosis of science and of philosophy, in that it has brought it to its final culmination and its ultimate possible perfection. As such, it asserts that it has invested the universe with the radiance of a single interpreting formula, and has penetrated its darkest abysses with scientific light. It resolves all the phases of its past; tracing them in order from the beginning, when star-dust was found to be moving out of chaos from a rarer to a denser medium, onwards to the end when all the possible cycles of development having been completed, and every stadium of progressive integration and differentiation having been accomplished, the ultimate particles shall be released from these bonds, when the scene is to shift, and star-dust somehow shall re-appear on the arena, to rush again from a rarer to a denser medium, and the cycle of development shall again be renewed.

We do not propose to enter into an extended dis-

cussion of this system. We are well aware that the public, for several reasons, are weary of these minute and extended criticisms. Prominent among these reasons is this: that few are so familiar with each of the several lines of argument in which lies its strength if it be true, and its weakness if it is false, as to be able to judge of any considerable number of them. Fewer still are competent to pronounce upon the relation of each part to every other, and the cumulative force of all as they bear upon the grand conclusion. What is within the sphere of each man's specialty he can understand. What is derived from the sphere of another's observation or thought he must take in some sense upon trust. But the general similarity between the several relations and facts of the several spheres any man can vaguely appreciate; and hence the generalizations of the theory seem plausible at their first impression, though the impression is vague, and perhaps because it is vague. Meanwhile the confiding student trusts to the brilliant suggestions of the confident theorist, and his more confident asseverations. So long as he is in the attitude of a learner, the path is easy; but, so soon as he is summoned to the duty of the critic, his task is difficult and irksome, because he must of necessity pass judgment upon facts and analogies with which he is not familiar, and in respect to which he feels that he is incompetent to act as a judge. That many physiologists should favor a system of philosophy which finds development everywhere is not very surprising. That those who are not physiologists in special should at first hesitate, and know not what to say, and then be dazed by the imposing plausibility of the generalizations which they cannot fully appreciate, and finally relapse into a "silence which is taken for consent," seems at first thought surprising, but on second thought

is altogether natural. Explain the fact as we may, the theory takes captive many a general student and otherwise critical thinker, simply because he is unable to reply to those reasonings on many points which are out of the range of his studies. And yet the breadth of the generalizations, the confidence with which they are urged, the nonchalance with which difficulties are surmounted, the vast number of facts which the expounder has at his command, the ease with which he marshals them under groups, and, above all, the mysterious fascination with which the phenomena of growth and change are invested to every imaginative mind,—all these account, in part, for the unquestioning acceptance of this theory by many quick-minded thinkers, who would confess themselves altogether disqualified closely to scrutinize its claims. It is obvious, that those who, for the reasons given, cannot understand the arguments for, are disqualified to understand the arguments against; and hence special and minute criticisms of these pretentious and portentous theories attract attention from but few.

There is one line of argument, however, which is accessible to every mind. It concerns itself with the relation of this theory to the certainty and the trustworthiness of science itself. If it can be clearly proved that the physiological metaphysics, by its own showing, is fatal to the authority and trustworthiness of knowledge itself in all its forms, and especially in the processes and the conditions which are essential to science, it would seem that a system which had claimed for itself, and had seemed to many to be, the apotheosis of science, has committed theoretical suicide. It is our purpose to show this by arguments and illustrations, which are open to the understanding of any one who is capable of judging of subjects of this kind, or will be likely to be inter-

ested in the question. So far as the teachings of this system are concerned with the authority of and trustworthiness of science, they relate to four distinct topics ; viz., *the process of knowledge, the agent in knowledge, the conditions of knowledge, and the sphere of knowledge*, — whether this last be the finite universe or the something more, called the infinite, the absolute, or God.

(1) We begin with the process of knowledge, because science as a process is a form of knowing which passes into a product. It is also, as process and product, one of the highest and noblest. Any view of the process which is seriously defective in any particular must vitiate our conceptions of the product by weakening or destroying the grounds of our confidence in the structure which it builds for us. A fatally defective or inconsistent theory of the act of knowledge must be suicidal to science. It is, then, a matter of fundamental interest to know what the physiological view of knowledge must be according to the fundamental theory of the evolutionists, as it is defined to be by themselves.

We ask, first, what knowledge is, after the theory of the evolutionist? We answer, it must be a phenomenon resulting from the differentiation and integration of two preceding phenomena, — less complex than itself. We may not refer to a knowing agent as its sole originator ; because such an agent, exercising the function of certainty, and distinguishing, it may be, the object known, from itself the knowing spirit, is an inadmissible conception. Evolution recognizes no single agent in any process. It requires at least two simpler forms or phenomena ; i.e., modes of the unknown and unknowable force. These must interact, as seed and sunshine, as the nucleus and protoplasm, as nerve-cell or stimulant, in such a way as to evolve a *tertium quid* different from and more complex than either. Let us suppose that a

phenomenon of this kind, thus evoked by its consenting forces, and sustained in being only so long as they conspire in energy, has reached so high a position of differentiated integration in a happily constituted and thoroughly cultivated brain, as to take the form of a completed theory of evolution. The theory is demonstrated to the mind of an ingenious philosopher. In scientific language, it floats in a delightful equipoise of consilient if not jubilant brain-cells in the roomy head of its forever famous originator. It also finds entrance and makes place for itself in very many other nervous organizations sufficiently differentiated to give it an answering response of favor. As long as these agencies are in this state of consentient re-action, the science of evolution is accepted as true. But the progress of development, by its own showing, can never rest. No more can any process which we commonly call certainty or conviction of truth. The exciting agents which in the vulgar speech men call evidence, but in scientific nomenclature we must call highly differentiated and compactly integrated nerve-cells, which represent the theory to be received, and the responsive molecules which in common speech are unphysiologically supposed to represent a conviction of its truth,—neither of these agencies can linger long in the happy condition of equilibrium which they have attained. Under the onward and upward pressure of manifest destiny, they must proceed to other integrations and differentiations which, whether they be beings or phenomena, must be unlike those which have preceded them. That phenomenon which may remain for a while,—call it certainty, conviction, knowledge, science,—long enough to buoy up the magnificent theory of evolution, according to the theory and under the operation of evolution itself, can have no permanent existence, and of course no final and universal authority.

Or if certainty is still accorded to the lower rank of agencies just left behind, the knowledge and the truth, the subjective conviction and the objective reality, may both be superseded by some other combination of agencies, which is totally unlike that which has previously come into being. This is no caricature of the theory, but the strictly scientific application of its principles. For, according to its teachings, every thing is phenomenal, even the function of knowledge itself. Every phenomenon is brought into being, and sustained in being, and is what it is as a being, by the consentient action of the agencies which are concerned in its production. Beneath every act of knowledge, and within every act of knowledge, the whole universe of force somehow is present. What the phenomenon is, must depend on the character of the agencies from which it is evolved. If the agents change in their so-called constitution, the re-actions must change with them. This must be true of all the forms of knowledge, from the lowest to the highest. It must be pre-eminently true of the highest as yet attained by man, that knowledge which is science and which gives science.

Should this view of the matter strike any of our readers as singular and strained, it must be because they have not reflected on the reach and import of this theory of evolution when it is applied to the function of knowledge. This positive function, as we know it in our experience, is so totally unlike any thing of this sort, that we cannot believe that any theory can teach so defective a conception of its nature as the one we have described. Or it may be we carry the convictions which we derive from our conscious exercise of the act of knowledge over into our interpretations of the consequences which any theory would logically involve. It must also be confessed, that the language and representations of much, if

not of most, of our English psychology give more or less sanction to those views of knowledge which the physiological metaphysics have only carried to an extreme in one direction, which they somehow have thought to correct in the other by introducing from the world of life the more elevating conceptions of development. It is notorious that the drift of English psychology since the time of Hobbes has set very strongly in the direction of the passivity of the intellect. The well-known fact, that in sense-perception physical agents or objects must act upon the sense-organs and the sensorium, in order that the material world may be known, and the prominence given to the operations of the passive memory and imagination in the cerebral and associational schools, have sanctioned these gross misconceptions of the nature of knowledge itself. These in turn have prepared the way for theories which conceive the act either as an effect produced by the object known upon the knowing mind, — in this reversing the order of nature and of experience, — or represent it as a function in which the object and mind co-act; the result being the outcome of their conspiring energies, as when the ball follows the diagonal between two impulses at right angles to one other, or as oxygen and hydrogen are developed by union into water. Certainly those evolutionists who venture any opinions on psychology do not hesitate to avow the grossest explanations of the mental processes which are matters of the commonest experience. Both Mr. Spencer and Mr. Huxley go so far as to accept the doctrine of Hume, that the processes of knowledge are best expressed by Hume's "impressions and ideas," and seem to be sublimely unconscious that anybody who presumes to be a philosopher can hesitate to accept these as the last words upon the subject. These gross misconceptions are not relieved from their logical con-

sequences by being clothed in the more attractive garb of that development, or evolution, which is borrowed from the sphere of life, especially if development itself is conceived as a progress from lower to higher potencies of mechanical aggregation, beginning with a crystal and ending with a spirit. Development, moreover, suggests associations which are elevated and spiritual. For this reason it can be used more readily to displace and dignify mechanical relations and laws. It suggests the variety, the resources, the beauty, the intelligence, the joy, and the rapture of jubilant life beings. It is invested with the associations of mystery, of independence, and of self-reliance, which are connected with living beings, even of lower types. These associations serve very largely to explain the otherwise inexplicable fact, that evolution, even when it has become atheistic or agnostic in its philosophy, has entered so easily and been entertained so graciously in scientific circles which are even high in moral tone and devout in religious aspiration.

It is more than probable, that the construction which we have placed upon the evolutionist theory of knowledge as necessarily suicidal to science, will be regarded as forced and unfair. The *reductio ad absurdum* from the logical consequences or consistencies of a definition or theory, though acknowledged to be theoretically just, is often rejected as practically unfair, especially if it can be urged that the advocate of a theory may perhaps not accept the definition, or the construction which the critic imposes upon the doctrine which he assails. The defender or looker-on will not unfrequently interpose in the interest of fair play, and insist that the representative of the theory assailed shall be allowed to define and apply his own conceptions. It is always courteous and usually just to concede this claim. In the present instance the demand can be readily met,

and the challenge may be most gratefully accepted. Fortunately we have in his own language the theory of knowledge which is accepted and expounded by the great advocate of physiological metaphysics. In Herbert Spencer's "Principles of Psychology" (Part I. chaps. v., vi., and vii.; i. c. i.), this theory may be found by any person who will use the patience to search out its fragmentary and loosely scattered elements, and carefully adjust them into a coherent whole. At first the concession is made, and, as it would seem, with astonishing *naïveté*, which almost wins the heart of the critic, not only that psychical phenomena are known by consciousness or introspection alone, but that science can neither discern nor prove any connection between these and any changes in the organism. It is almost incredible, that after this *naïve* concession of Mr. Spencer, which sends us to consciousness as the sole and final arbiter of what it is to know, he should rob it of all its authority by asserting, that even in sensation all that we can know of the relation of the changes in the nervous organism to its related conscious activities must be learned through the light which is derived from the operations of evolution in other spheres of being. This is at once to set aside the final testimony of consciousness in respect to the lowest form of knowledge in sense-perception, by referring the decision to a metaphysical or physiological theory. It is to set up a theory which professes to be founded on facts which are confessed to have no possible relation to the facts in question, to settle questions of fact and experience which are asserted to be utterly unlike those from which the induction is derived.

The conclusion which he derives from this induction is very clearly, though very indirectly, stated thus: "Though accumulated observations and experiments

have led us, by a very indirect series of inferences, to the belief that mind and nervous action are the subjective and objective forces of the same thing, we remain utterly incapable of seeing, and even of imagining, how the two are related" (§ 56, "Principles of Psychology"). This conclusion being reached, the author proceeds to show how they are related in sense-perception ; i.e., how knowledge may be developed from or expressed in terms of nervous action. "Knowing implies something acted upon and something acting upon it." "That which in the act of knowing is affected by the thing known, must itself be the substance of the mind. The substance of the mind escapes into some new form in recognizing some form under which it has just existed." He then argues, that what seem to be the simplest sense-perceptions — i.e., alterations of the substance of the mind, or subjective phenomena of nervous activity — cannot be simple, because in sound we distinguish quality, *timbre*, and volume. In this, obviously, he mistakes an ultimate or indecomposable experience of consciousness for one of several relations which it may have to other experiences or acts. As we cannot find in consciousness the simplest element of this experience, conceived by him to be complex, we must look for it elsewhere. We finally find, or conclude, or conjecture, that it must be akin to a simple "nervous shock." We next find, or infer, that many simple nervous shocks are the essential counterpart, or objective side, to which the simplest experience of consciousness in sensation corresponds. We concede, then, that "the nerve-pulses and the pulses of feeling clearly answer to one another ; and it can scarcely be doubted that they do so throughout." If next we apply to the teachings of chemistry concerning matter in order to gain light as to the way in which these complex pulses of feeling may be accounted

for, we find that complex and dissimilar material agencies are produced from various combinations of simple particles, and that in the last analysis all the so-called simple substances are resolved into different modes of one primordial form of matter. This leads us to conclude by analogy, that "the multitudinous forms of mind known as different feelings may be composed of simpler units of feeling, and even of units fundamentally of one kind." To the objection that this would obliterate and set aside the distinction between mind and matter, the author replies, that, as we know nothing of the essence of either, it is of little consequence whether we define the phenomena of matter in terms of mind, or the phenomena of mind in terms of matter. Upon this we make the single comment, that, whether this be so or not, it is of the utmost consequence that that process or operation which we usually call knowledge — the process by which science is built up, and upon the trustworthiness and authority of which science depends — should be rightly conceived. If knowledge, when rightly interpreted, is resolved into a series of nervous shocks, to which correspond a series of experiences which are felt, we very naturally inquire what meaning or authority there is in such shocks and accompanying feelings as are expressed in the words, "I know by analogy, or believe, that the doctrine of evolution is true;" or what assurance we have, that what we call our present conviction on this subject, which we are informed is rapidly becoming the accepted creed of the present generation, will be retained in the generation which is to follow?

Our misgivings are increased as we follow Mr. Spencer's analysis of knowledge as experienced in consciousness. "The proximate components of mind," he tells us, "are of two broadly contrasted kinds, — feel-

ings, and the relations between feelings." We accept this without questioning, as enabling us to understand what the nature of the act is by which we accept Mr. Spencer's doctrine of evolution as true. We apprehend certain conceptions in certain relations; the conceptions being the subject-matter, the relations being the discovered truth or probability of this subject-matter. We are also almost overjoyed by the anticipation that we are to learn at last what he thinks of the operations of the higher intellect in discerning relations. It is a commonplace with other philosophers, and pre-eminently with all modern scientists, that the relations of phenomena are all with which science concerns itself, and that the higher intelligence is employed solely in discovering and comparing them. We turn over the leaf with eager if not with agitated curiosity, to learn what the physiological metaphysics may have to say upon this point. We scarcely pause to notice Spencer's definition of the feelings as constituting the materials between which relations are discerned. We observe in passing, however, that "a feeling, as we here define it, is any portion of consciousness which occupies a place sufficiently large to give it a perceivable individuality;" i.e., in common speech, it is the act of apprehending the minutest element or object which can be distinguished. But what is a *relation*, as of likeness or identity, of causation, or adaptation or end? What does this philosophy make of these subtle links of significance by which facts — called feelings by Spencer — are connected together into those combinations, and grow into those structures, which men call science, chief and noblest of which is the science of sciences, the physiological metaphysics, of which Development is the charmed word? Listen to the answer: "A relation between feelings is, on the contrary, characterized by

occupying no appreciable part of consciousness. Take away the terms it unites, and it disappears along with them; having no independent place, no individuality of its own. It is true, that, under an ultimate analysis, *what we call a relation proves to be itself a kind of feeling, — the momentary feeling accompanying the transition from one conspicuous feeling to an adjacent conspicuous feeling*" (§ 65, "Principles of Psychology"). Here we have the key to the physiological metaphysics! The acts of discerning relations, the related objects, and the relations discerned, are *feelings*, and, moreover, "such feelings as accompany the transition from one conspicuous feeling to an adjacent conspicuous feeling!" The sublime interpretations of the scientific mind, such as Kepler and Newton and Davy and Faraday and Kirchhoff have now and then achieved, and which have elevated them to such triumphant joy as only befits a moment of divine inspiration, and the analogies which they have discovered and applied, — these, physiologically explained, are the briefly and yet faintly appreciated emotions experienced in the transitions from one feeling to another. But what is science if she accepts relations which are conceived after this fashion? Let the student of her history who knows what science has done and is now doing, ask whether this chemico-physiological explanation does justice to those acts of sagacious insight by which science has ascended to that lofty seat from which she dares either proudly to dispense with God, or confidently yet humbly to read the thoughts of God. We conclude, that, whatever else may be true of the solutions which the physiological metaphysics give of other problems, they furnish no satisfactory explanation of the processes by which science herself has been evolved into being, or of the authority by which she commands the assent of mankind.

(2) Equally unsatisfactory are the representations of the agent of science, whether it be called the human intelligence or the human soul. It would seem as though any satisfactory metaphysics would of necessity exalt the agent of all these achievements to the highest possible position, and accord to it the noblest endowments and capacities. To do this has been the temptation of scientific thinkers in other ages. It has been reserved for the science of our time to show its extremest daring by its attempts to degrade these activities, and to crown that daring by efforts to dishonor or destroy the agent which performs them. It would seem that none but a modern scientist could be moved to sublime delight in looking back upon his individual self as once floating in the whirl of the original fire-mists, or rise to a feeling of exultation in looking forward to himself as flashing in the azure tints which drape a magnificent sunset. Nor have these conceptions of man's spiritual being been confined to the soarings of the scientific imagination. The reason has also used its utmost refinement of analysis, and stretched its analogies into the boldest theories, in order to reduce the knowing agent to "a physiological expression," or a metaphysical abstraction. It is true, that, in order to be successful, it must first avail itself of the mystery and magic which the common mind finds in the processes of life exalting and magnifying them so high as to make them capable of spiritual functions, and then give both life and spirit a downward plunge by its mechanical theory of "nervous shocks." If our readers will assure themselves that this representation is no exaggeration, let them carefully study the representations of the soul as they are reasoned out by Bain or Spencer, or Lewes or Fiske. Let them not be imposed on by the apparently candid and considerate admissions which they find in

all these writers of the difference between physiological and psychological experiences, nor of the incommensurability of the one with the other. They will find, that, in the last analysis, the so-called psychological experiences are only other names for states of the nervous system which, in the very terms by which they are described, are only removed by the faintest *nuances* from mechanism and chimism, either in thought or language. As to the mind itself as known to itself, as exercising the authority of judgment, or being convinced in certainty, there is not the hint that this is not only essential but conspicuous in the operations of scientific knowledge. The suspicion or conviction that there is or can be an agent which exists or acts in them all, is set aside by the suggestion, that mental acts, and the agent which knows, are but fleeting states or phenomena of the unknown force which now appears as a knowable phase of what we call matter, and now as the knowing act of what we call mind; while of the nature of this two-faced force we can know nothing more than is given in these transient phenomena, while the permanent existence of the subject of either is simply the longer persistence of the force which manifests itself through either aspect of these bi-polar phenomena. To reach any scientific conviction would seem to require a mind to be convinced: but this philosophy knows no mind, but only a state which is correlated to a phase of the nervous system; and this is but another phase of other agents sublimated to or through higher removes of refinement, from the preceding simpler elements, or the simpler phenomena which went before. No explanation can be given of the plausibility of such a theory except that its theory of the soul is purely physiological. None of these most dexterous word substitutions or subtle interchanges of thought can be accepted as the equiva-

lent for that emphatic assertion of its own being which the soul makes to itself in every step of its knowing, and which it emphasizes more positively the higher it rises in scientific achievement.

(3) We pass next to the conditions of knowledge in the apprehension of which the physiological metaphysics claims special advantages. It has learned, on the one hand, to recognize the necessity of certain categories which must be assumed as unquestioned and primitive in order that science may be possible, but it will not recognize them as either forms of being or forms of mind; because, according to the physiological theory, beings and mind are varying forms or phenomena of the unknown force themselves, which are more or less persistent, evolved into one another by differences which divide and combinations which unite. There are relations, however, ever recurring, which mix with all our knowing, and enter into all our experiences, and which accompany all our beliefs, and are especially conspicuous in the high generalizations of scientific thought. It is true, that physiologically conceived, as has already been explained, relations are only feelings, more transient than the feelings between which they are said to exist; i.e., they are experienced in the mind's transition from one feeling to another. There are relations between complexes of feelings and also between complexes of relations. These relations, like all other mental experiences, involve certain definite activities of the nervous organism, which, if often repeated, tend to perpetuation. Let it now be supposed that certain relations, as of causation, or time and space, both in their specialized and more general forms, should often be repeated, and that the molecular condition of the brain should be gradually adjusted. By the law of heredity, the tendencies to these adjustments must pass over into

the brains of the succeeding generation. By constant exercise, these adjustments would be so fixed as invariably to recur when their appropriate conditions should require, attended by their accompanying psychical experiences, till at last, as the result of the accumulated energy of these recurring and inherited experiences, it has become absolutely necessary to the intellectual activity of the human race, as we find it, to think under them as accepted categories of scientific knowledge. The physiological origin and character of this theory of the conditions of science are sufficiently obvious. Every element in it is purely physiological, — the nervous activity with its counterpart in mental activity ; tendencies often awakened and fixed in the brain by repetition ; heredity by physiological transmission, and unconscious and necessary revival under every possible occasion. We do not assert that the theory, when physiologically viewed, is altogether coherent. Even though we should allow its principal assumptions to pass unquestioned, we do not find that it explains why so few of these relations between complex feelings or complex relations should originally present themselves so frequently as to thrust aside many others ; e.g., why the relations of time and space or causation should gain any advantage by their frequency, were there not some original necessity which determined them to be frequently and even uniformly present to the discerning mind. But, if any such necessity for their frequent occurrence be admitted, then it must have existed before the intermediate action of the physiological agencies which are introduced to explain the permanence and the universality of the categories which have thus become the intellectual outfit of the race. Then, again, heredity, while it transmits with strength and certainty, also transmits with tendencies to variation ; and the environ-

ment which receives the transmitted legacy of the past also fixes it after some discernible change. But this is contrary to the theory which holds the categories to be axiomatic and permanent.

If, on the other hand, we suppose the theory to be true, the consequences must be fatal to the authority of science itself. We see not why, under the operation of the physiological agencies supposed, new categories must not come into existence, which may displace or perhaps contradict those already recognized — nor indeed, why any conceivable species of so-called relations may not come into being ; nor why, under the operation of the inevitable tendency to change, the entire structure of axiomatic relations which are now accepted should not be outgrown ; nor why, in short, science itself, as we know it, with its space and time, its number and magnitude, its causation and its adaptations, should not finally be dissipated into intellectual or material star-dust.

It would seem as though any system of metaphysics ought at least to provide for its own permanence, and the solidity of the sciences which rest upon it. But when, instead of this, it supplies the materials and provides for the necessity of its own displacement, we cannot see why it does not commit a deliberate *hari-kari*, with no less certain and dreadful fatality because of the solemn state and heroic dignity with which it inflicts and accepts the final stroke.

One category or axiom is fundamental to the physiological theory which seems especially endangered ; and that is, the assumption of the law of evolution itself as necessarily permanent. No man should claim to be a philosopher who has not asked himself the question, and attempted to answer it, Why do I believe that the law of development which I observe to exist within

a limited sphere of living beings, extends through the universe of being, or why do I assume that a mode of operation which has held good for many ages will continue for all the ages, or even has prevailed from the first? The question is not answered satisfactorily by the physiological explanation of our fundamental beliefs. Mr. Spencer does not phrase it in the form which we have adopted; although he does very often concede that the evidence for our acceptance of the theory as universal and all-enduring is to be found in its universal presence, and its capacity to explain all observed phenomena. But where this last criterion of truth has originated he does not seem to consider. On his own theory, it is a chance brain-growth, which has become a fixed growth, — an axiom of the mind, broad enough to underlie all forms of scientific research, and deep enough to sustain the structure into which they are wrought; but how a conviction so fundamental should have gained convincing power by the simple repetition of its discerned exemplifications, it is not easy to see. But a metaphysics which does not seek to explain our belief in the fixedness of the course of nature can never satisfy a truly scientific mind. Such a system is not enlightened enough to ask all the questions which should suggest themselves to such a mind. It is not surprising, that, if it fails to ask them with intelligence, it should be unable to answer them satisfactorily. So far as it may be said to ask any questions respecting the foundation of our faith in the physiological relation of evolution, it answers by phenomena and analogies which are purely physiological, and even resolves these physiological data into forces and laws which are purely mechanical; translating our very faith in evolution into the harmonized movements of the brain-cells of the philosopher, and explains the movements of these brain-

cells by the mechanical movements of the particles of which they are composed.

(4) We notice, last of all, that the physiological metaphysics makes no provision for, or recognition of, the *sphere* of scientific inquiry in its full extent and completeness. There are certain conceptions and relations for the actual presence of which to the mind it can give no account; much less can it explain our beliefs and reasonings in regard to them. If it be conceded, that it is adequate to the demands of the finite universe of matter and spirit in that it can mirror its facts and relations by those processes of responsive intelligence which its physiological theories provide, it fails altogether to explain the presence of our ideas of space, time, and God, and their relations to finite beings. That these conceptions are often present to the minds of men cannot be denied. We do not insist that they believe in them as realities. All that we need to assume is, that they can and do think of them. The physiological metaphysics can in some sense explain the presence to the mind of finite objects, and their pictures, and their generalized notions, and, after its fashion, of their relations; but it cannot possibly conjure into being any nervous responses, any combinations or reflex actions which shall explain the notion of time or space as unbounded, or of God as self-existent and everywhere knowing and acting. Indeed, unless we greatly misunderstand Mr. Spencer's avowals, he limits the power of human ideation to the capacity to picture a certain extent of finite material, which must break down under its impotent efforts to grasp more than a limited *quantum* of combined and expanded objects and their relations. He very naturally attempts to dispose of space and time and the infinite by sending them to the limbo of *pseudo-ideas*; but he does not send them

so far from the border-line of those thoughts and ideas which bask in the clear sunlight, that they do not now and then obtrude their dusky shadows along and over the horizon which bounds our every-day human thinking. He rightly judges that he has no place for these ideas in his system; for if all thinking is but the charging and discharging of so much nervous force, or the *dislocation* and *relocation* of so many brain-cells, then it is evident that there is no apparatus which can picture to man any but finite objects. The physiological metaphysics furnishes no such apparatus; for, by its own showing, the highest capacity into which the intellect of man can be developed can never rise beyond the actions and re-actions of a definite *quantum* of nervous matter, as it is acted on by a definite *quantum* of existing stimuli. How can such a mind know space, or time, or God? How can it even think of them? Or how, with the materials which are furnished for it to work upon, can it construct for itself the conceptions of such entities? We are well aware that Spencer, with a *naïveté* that is charming, often breaks from the logical chain which should bind him to his system, and flies and even soars above it, in speculations concerning the mysterious unknown which is symbolized to men by its perpetual approximations to reality, which are doomed ever to change because they must ever fail to do justice to the unreachable and inexpressible truth. We know very well that he represents it as the crowning glory of his system of development, that it satisfies man's belief that there is an unknowable object of longing and worship, and that his conceptions of its nature must be forever changing because inadequate. But we cannot see how, upon his own theory, he finds any place even for the conceptions of what he says cannot be known, for the reason that he makes the very conception im-

possible. It would seem to us, that, in order to know that we cannot know it, we must know what the something is which we cannot know; and, for the power to conceive such an entity, his theory literally and figuratively provides no place in the human brain. It is doubtless grateful to him now and then to break from the limits of his own principles to contemplate some of the many things in heaven and earth which are *not* dreamed of in his philosophy; but his friends should never allow him to stray beyond the enclosure within which he has confined himself, lest he impale himself upon some of the stakes with which he has hedged himself about. A philosophy which cannot even think of time, or space, or God, has already doomed itself to self-destruction, however ambitious it may be to settle questions which it has demonstrated its incompetency to entertain.

But we ought to bring our meditation to a close. No phenomenon of modern thinking is more marvellous than the suddenness with which the physiological metaphysics has taken form and attracted to itself public attention. It is far more wonderful that it should have been accepted with so little scrutiny, and been assented to with so blind and headlong an allegiance by large classes of men who claim to be little more than laymen in both physiology and philosophy. It is more wonderful still that the attempt to challenge its assumptions and to scrutinize its evidence, especially by philosophers or theologians, should have been resented as bigoted and ignorant intrusions into the domains of pure science, and have fixed its devotees in a more blind and unquestioning faith in the extremest conclusions, or have even determined the sympathy of some towards the most reckless assertions of principles which are grossly inconsistent with religion, morality, and social order.

The doctrine of development in the sphere of life, whether vegetable or animal, is familiar to the experiences of the most superficial student of natural history. The distinct assertion of it in a wider reach and application, after a fixed order or plan, when propounded by modern naturalists, had a highly poetic and even a religious tinge, such as at first exposed it to suspicion in the judgment of sober analysts. Only devout theists, or mystic pantheists, or imaginative naturalists, would favorably regard the theory of germs as containing within themselves the promise and potency of so wondrous a life which was waiting to be developed from within, and which, in its turn, held within itself the capacity to produce germs of still greater promise and potency. The extension of development to the production of new species required only a larger faith and a more extensive observation. It was not till the tendency to variation was conceived of as in some sort a mechanical force, and capable of approximative mathematical formulization, of course without warrant, that the theory gained a hearing from the schools. The emphasizing of the influence of environment as co-acting rigidly and severely with the tendency to variation, and the addition of the struggle for existence and the survival of the fittest, tended to abate still more of the poetical and religious aspects of simple development. Even then there was no necessary inconsistency with the belief that intelligence originated and controls the operations of life in the individual and the species. Indeed, the theory rightly viewed, if you take intelligence and spirit out from its domain, supposes a plan and prevision with the amplest resources for combination and selection, and is not inconsistent with the devoutest theism. The very word development in the minds of most men, and in the unconscious speech of

even atheists and naturalists, supposes a plan after which phenomena are evolved into view. Unluckily, when the theory and relations were extended across the boundaries of living beings, it was taken up by men who believed that life is only a more complex form of mechanism, and spirit a more complex form of life, who held, moreover, that mechanism rules the universe, and that all its wondrous phenomena, from attraction to thinking and loving, depend simply on the collocations and motions of particles which are in themselves inert, and, compared with one another, are indistinguishable. As soon as this construction was accepted, the poetico-religious theory of development became only a stupid game of permutation and combination. The progress of the universe was as uninteresting and as uninteresting as the evolution of logarithmic indices which are never applied; and, what is worst of all, the system which derived all its plausibility and interest from the phenomena of life provided for its own refutation and abandonment by the suicide to which it was self-doomed. It affirmed that the ultimate molecules or simplest forms of matter have not only the capacity for, but are self-moved to, acts of combining into more complex unions, each of which is capable of phenomena higher in the scale of existence. When the highest forms of the inorganic pass, by insensible gradations, into the lowest forms of life, the higher forms of life begin to put on the lower forms of sentience and intelligence. It follows by strict necessity, that all the spirit of which we are cognizant — all finite spirit — is only some highly developed form of matter. It would seem that a universe like this, with germs like these, endowed with such varied capacities of co-action and development, and certain to proceed with advancing steps through an ascending line of higher possibilities, must require as its sup-

plement and explanation a plan, — a thought implying a thinker. We have seen that the logic of the system must exclude even the conception, and makes no provision for the belief, of such an agent. The contempt and scorn, however, with which this belief has been rejected by so many evolutionists, can only be pardoned in view of their profound ignorance that teleological views have been held by some of the profoundest philosophers, who have made the most valuable contributions to positive knowledge. It would seem also, that in proportion to the earnestness with which fact and experiment have been insisted on as the only verifications of hypothesis, and the more distinctly mathematical determinations of law have been exacted, the more romantic and gratuitous has been the faith in forces wholly incapable of mathematical promulgation, and to which experiments, even of the most general character, could not possibly be applied. As we follow out the system into other applications, we find that the theories of ethics and politics derived from it are as offensive as the materialism and atheism which it involves or supposes. Perhaps we may say that they are more immediately dangerous and offensive because they are capable of being more directly destructive in their consequences. And yet so generally has literature accepted this physiological philosophy as alone rational and certain, that it is assumed by many who know little of physiology, that this science of life, thus misunderstood and misapplied, is the foundation for and introduction to ethical and political philosophy. That the science of man in his actual nature and in all his capacities is the proper introduction to ethics and politics is true ; but it is quite another thing to hold that the sense of duty and the recognition of right are the products of social interactions, and may be resolved into the conceptions of interest which have been devel-

oped by a brutal struggle for supremacy, and wrought into the brain by the manifold repetitions of force, prompted by the selfish and sensual desires which were the only impulses by which man was originally moved.

It is somewhat surprising, moreover, that any protest against such a system, which is founded on its practical tendencies, should be resented so sensitively by a certain and a large class of critics as necessarily proceeding from theological traditions or prejudices.

We are more surprised, that the learned presidents of academies of science are sometimes more anxious to avow their adhesion to the doctrine of evolution than to state in which of its many senses they understand and accept it. Or is it possible that they do not understand that there is a theory of development which not only consists with the belief in thought and a plan in the history of the universe, but requires for its beginnings an intelligent and interpreting spirit in man as truly as it does an originating and sustaining spirit in God? Is it possible that they can be so ignorant as not to know that evolution does not necessarily mean a blind force acting by mathematical laws, which of themselves are the products of highly sublimated star-dust, according to a law of progression which is itself prescribed and assented to by other phenomena somewhat more persistent than the rest, and whose attenuated skeleton of materialism is made to seem plethoric and buoyant by fine feathers like heredity, development, differentiation, and integration, some of which are not yet legitimized by definition or verification, and others of which are confessedly borrowed from a philosophy that is as mathematical and analytic on the one hand as it is poetic and devout on the other? We would also express our surprise that these leaders of scientific opinion, who happen to have the reputation of believing in

such spiritual agencies in the universe as man and God, should deem it necessary so carefully on scientific occasions to affirm that science concerns itself only with the laws of nature and the phenomena which these laws explain, and never care to inquire whether spirit is not as truly an agent in nature as matter, and whether, both as created and creator, it may not determine phenomena without violating law and order in the universe. We know that theologians and metaphysicians are foolishly sensitive and intermeddling, and that they are alarmed by uncommon phrases; but we see no reason why, because a man is a scientist, he should have so many negative protests for theistic theologians, and so few for atheistic materialists, who in their way are equally blind and romantic in their fondness for high-sounding phraseology.

But what surprises us most of all, is that the logic of the system itself has not oftener been scrutinized and more decidedly rejected by scientists. Surely there is a difference between vague and distant affinities and significant likenesses, between analogies which compel and so-called analogies which amuse the fancy but exclude conviction. It would seem that science ought to be as sensitive to unlikeness in phenomena as to likeness, and, more than all, should be foremost to declare that a metaphysics which destroys itself by its own logic, with every science which it professes to sustain and account for, ought by common consent to be relegated at once to the limbo of the many speculations which have died by their own hands.

P.S. The preceding meditation, if it has served no other purpose, may have made conspicuous the difficulty of treating in a popular manner a subject, the fundamental conceptions of which are liable to vague-

ness of use and diversity of interpretation. In view of this liability, the writer subjoins a brief sketch of the history of the terms evolution and development in modern science, which, since writing the above, he finds in R. Euckens's "Geschichte und Kritik der Grundbegriffe der Gegenwart," Leipzig, 1878. Subsequently translated by Professor M. Stuart Phelps. D. Appleton & Co., 1881.

Explicatio first appears interchangeably with *evolutio* in Nicolas of Cusa, but used in a real and not simply a logical application. Kepler applies it to the production of thoughts as well as things. Development—Germ., *Entwicklung*, in the modern application or proximately—is used occasionally by Kant in his early writings. Through Herder, with whom it took the modern definite meaning, and was a favorite word, and Tetens, it was adopted into general use, and has now become almost trite. The term development, strictly construed, did not at first correspond to the modern acceptance. Originally it supposed an outfit of properties and powers, which are unfolded in process of time. The modern use supposes the fitting out or providing the subject with powers to be itself the product of development, carrying us back to certain fundamental powers from which these secondary capacities proceed.

This genetic interpretation was well known to the Greeks, pre-eminently to Aristotle, who, following Plato, makes the whole to precede the parts; the type determining by its presence and agency their formation and working. This view remained current through later antiquity, the early Christian times, and the Middle Ages, with here and there an exception. It was not, however, till modern philosophy taught us to comprehend being by means of causation that the genetic method of defining and explaining phenomena was in-

troduced. This explained how analysis into elements, conceived as living powers, gives at once the historical progress and the philosophical explanation of events. But the first in time is not necessarily the simplest and the ultimate : and development by tracing the historical order is still obliged to ask what is developed, and how and to what ; that is, it must go back to causes and their results.

Nor may we overlook the fact, that the genetic method may be applied in every one of the significations which development, both as term and conception, has assumed in modern philosophy. These are many. On the one side, the universe is made to come from a single ground-force ; on the other, several are assumed as necessary. One holds to matter as the beginning, another to spirit ; one proceeds from unity to multiplicity, another from the simple to the complex ; one makes it a formation from within outwards, another a superposition from without. The one class of tendencies begins with Nicolas of Cusa and culminates with Hegel, who develops all forms of being by the movement of the concept ; the other begins, as it were, with Descartes and ends with Darwin, which last theory has in some circles almost appropriated the conception of the word development in his own special interpretation. The term without qualification should be avoided, as involving confusion and vagueness of thought. Or, if we give to it a definite meaning, we should interpret it in the sense of some special theory.

The Darwinian theory knows nothing of inward dispositions or tendencies. Its strength lies in the definiteness with which it states its elements or forces, and its entire rejection of all inner agencies ; but its weakness lies in the obligation which it assumes to explain phenomena in causal as well as in historical relations.

To do this successfully, it must give the laws of the workings of its causes; and, as it only knows mechanical laws, it often is unable to do this. The next difficulty is, to account for the permanence of these effects in sustained forms of being, under the co-action of so many counteracting and co-acting causal agencies. To fall back on simple heredity is to fasten to nothing, and to fail to see that this includes all these difficulties within itself. To fail to regard permanent forms as effects to be accounted for, is to give up the most important problem of all, and to be content with elements only, and to abandon that with which development has to do by the wonderful complication of the universe as it is at present. All these difficulties gather strength, the wider and more varied the field is which is covered, especially when as now this method is applied to the sphere of spirit. Doubtless it has thrown some light upon some of its phenomena, but for spiritual phenomena it is most misleading when it assumes to judge wholly by material analogies. Especially would it be to assume that all which the spirit has or does comes to it from without. Great ingenuity has been expended in the attempt to show how this is possible; e.g., how customary combinations can be fixed as permanent laws, and how the instinct of self-preservation has been transformed into a moral law. Against all these ingenious explanations we should ask whether the method itself is not inconceivable and self-destructive? What conception can we have of a soul with no powers of its own? Can there be an effect without a counter-working? We can escape these difficulties only by simple materialism, but this brings difficulties of its own. If we believe in spirit, we cannot escape original tendencies. If we resort to custom, we must assume an original capacity for habit as a causal force acting under

law. Similarly with judgments of worth. We gain nothing by resorting to the unconscious except to solve a problem by getting rid of it. We gain nothing by analyzing phenomena into minute elements; for the question returns, How are the ultimate elements endowed, and what can they effect? If we deny original activity working according to law to the spiritual life, we must deny all permanent truths, and with it the causal force of the genetic method itself. With these denials goes the denial of science itself. It were ridiculous to concern ourselves with the problems of reason, after reason were banished from the world. The whole force of modern thought has arrayed itself against this materialistic sophistry,—prominently, Kant and Goethe: Kant has opposed to false analysis the true by showing that an original spiritual activity must be assumed, to render it possible to hold any thing to be simple and ultimate; Goethe in a memorable passage in his correspondence with Schiller, against that class of Frenchmen who think a whole is explained by the division of its analyzed parts. It follows from all this, that the doctrine of development is full of blessing or of bane, according to the presence or absence of other fundamental conceptions and relations.

IX.

FORCE, LAW, AND DESIGN.

A PHILOSOPHICAL STUDY FOR NON-PHILOSOPHICAL READERS.¹

“FORCE,” “Law,” and “Design ” are words which in these days are often in the mouths of men. Sharp discussions, confident assertions, and grave conclusions turn upon the meaning and applications in which they are used. By some, Force and Purpose are held to be natural enemies, each bent on the destruction of the other. If Law attempts to intervene, she runs the risk of being torn in pieces between the two. The questions concerning these terms are not new, though they seem new to us. In the schools of science they are as old or older than Socrates. Does blind force, or intelligent purpose, rule the universe? Are the laws of the universe self-poised and self-balancing tendencies, which hold one another in accidental equipoise? or are they simply the media by which the forces originated by the Creator’s power manifest His thoughts, so that man may understand and obey them? In modern physics, “Force” and “Law ” are great words, as all instructed men know; deservedly great, as all candid men confess; so great and self-sufficing in the opinion of some as to hold no definite relations to “Purpose.” While others hold that they indicate no design, others teach that they exclude all thought in nature and all belief in a thinker behind; others, that they are the

¹ Princeton Review, May, 1879.

more radiant with thought, just in proportion as they reveal new facts to the penetrating eye of Science.

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We ask first, what are the views which are accepted by the unscientific man. Every human being believes that he can *do something*, — that by action he can produce some change in the material world. He can strike a tree with a stick, or stamp the earth with his feet, or beat the air with his vocal organs. He can break a rock in pieces, or grind it to powder: he can produce heat and flame by rubbing two sticks together. The capacity to effect a change is known as force. We need not ask whether man has a name for the power which he knows he possesses. That he knows he possesses force, is obvious from the fact that he puts it into exercise on any, even the slightest, occasion; that he increases it by exercise; that he defies his antagonist to measure strength with himself; that he even prides himself upon the simple possession of it, without putting it to the proof. We do not ask whether he originally refers power to himself as a spirit or only to his body, or to both as undistinguished in his conscious self-inspection: it is enough that he knows what power is by the consciousness of using it. He also distinguishes the several forms of power, as to run, to hear,

to see, to read, to push, to pull, to kindle a fire, etc., to all of which several capacities he would give but a single name, had he the power to gather them under a single generalization.

But he does not limit the possession of force to himself. He believes that other men and animals possess similar capacities. He does not know this directly of them as he does of himself, but he knows it by the effects which both achieve. How he knows this, it is not my business here to explain. It is enough that he does know it, and knows it as positively as that he possesses these powers for himself. That he believes this of man and animal, no man doubts, nor that he believes this with a positiveness which is stronger than demonstration can impart. We do not undertake to explain the process, nor to give the reasons for this assurance, but only to state the fact as beyond dispute.

Man also finds force *in nature*. He sees effects achieved which neither himself, nor any nor all of his fellows, nor all of the animals, can produce, how much soever either may desire to reproduce or to avert them. The wind resists his progress, takes away his breath, howls around his cabin, or scatters it in wrath. The great natural agents, water and fire, the earth and the air, are now his smiling friends, scattering blessings beyond his hopes, or his wrathful foes, surpassing his extremest terrors. We do not ask whether he personifies the force or forces of nature, making each separate part or the whole to be alive, nor, if he does, by what processes he dispels his illusions: we only affirm, that he finds force and forces in nature, even after he has ceased to believe every bush and rock and tree to be alive. At what point in his history he reaches this position we need not ask, nor how definitely he holds it: we only assert, that at some time he gains and holds an

intelligent belief that force or the forces of nature do not directly proceed from a living animal, but belong to insentient matter.

He also begins very soon to learn that these forces produce their effects under *uniform conditions*. Friction, however long continued, does not set a stick on fire unless the wood is dry. The wind does not impel a boat unless the sail is firmly held at an angle which varies with its force and direction, and unless the boat is headed in a certain direction by the oar. The missile does not strike the mark, unless its aim is changed with the force of the wind and the distance of the mark. The untamed child, full of untried and untaught strength, goes forth to subdue the universe, and expects that it will bend and yield to his will. But it finds the universe ready to give back blow for blow. The harder the child pushes, the more stiffly does the universe push back. The first lesson which he learns is, that he cannot effect all which he desires to do, that there is force in other beings like himself; the next, that nature is strong as well as himself; and the next, that, in order to accomplish any thing, he must use his own force in certain relations to the forces with which he contends; in other words, that he must stoop if he would conquer, and must study the conditions under which and under which alone nature will grant him any favor.

The infant is not long in learning that nature acts according to laws. He does not cry after the moon a very long while. He does not beat his fist in anger against the door which stands in his way more than a few times. He learns how it can be opened. He looks into the face of this universe which confronts him with its battery of forces; and, as fast as he finds out the conditions and ways after which each will act, he acts accordingly. The wild man does the same: he subdues the

earth, the air, and the sea, just as he entraps the beast, and tames the dog, and breaks the horse, and subjects the elephant, by learning how each will act, and acting himself accordingly, either with or against. Just as soon and just so far as man believes that any force in nature is uniform in its actings, just so soon and just so far does he understand that force produces effects under varying conditions.

Last of all, the common man believes *there is purpose in nature*. The forces which he finds in himself are capacities to produce effects. These effects are objects of desire or dread. As he would gain or avoid them, he regulates his own actions by what he knows of the unchanging laws which he has learned are the conditions of success. Just as often as he acts thus intelligently, he acts for a purpose. So far as he is rational, he is controlled by some design. Force controlled by law always supposes some end. When it is thus employed and the design is worthy, the cycle of all the relations by which man knows and acts is complete; and his whole being is filled with light and joy. If this is true of himself, it must be true of the universe of force and law without himself. He cannot doubt that the living beings who are like himself must be impelled by design so far as they are rational.

But how is it with the universe which is not living, — the universe of earth and sky, of forest and sea, of mountain and abyss, of sunshine and storm, of lightning and earthquake, of the jocund dawn and the pensive evening, of fruitful showers and starving drought, of healthful breezes and the blasts of death? How does this universe appear to the wild man or the unscientific man so soon as he ceases to believe it to be a living monster, or half living, half dead, — so soon, in short, as he regards it as an aggregate of insensate force or

forces? — especially if he finds law in it, which regulates the operation of these forces, and holds them to orderly and certain results. We do not inquire whether he asks was it created by another, or does it exist of itself. We do not care whether he believes there were one or ten or ten thousand spirits engaged in the making of it, or whether it was made at all. We ask simply, whether he believes that purpose or design controls in the action of its forces so far as they are seen to be regulated in uniform methods to uniform results. No sooner does he ask the question, Is there thought and intention here? than he replies at once, Of course there is. He is but a fool who thinks otherwise, — who, knowing that so far as he himself is rational he controls forces by their laws, does not also believe that the steady and, so to speak, the regulated and controlled actings of nature manifest intention and design. Whether this is or is not the way in which unscientific men ought to conclude, there can be no question that they do interpret nature after this fashion, and cannot easily be persuaded to the contrary. We may not be able to explain how men in common life reach this conviction, but we cannot doubt that they do. We cannot trace the working of the mind of the infant, who finds in the face of its mother the thoughts and feelings which flit across her features, which beam from her eye, and leap from her lips. We may not be able to understand how the first slender thread is thrown from mind to mind and heart to heart when man meets his fellow, nor how these many threads are united into strand after strand, till, almost sooner than we can tell it, a strong cable binds the two, and then another, and soon a sure and steady bridge is fixed, along which thoughts come and go, almost without the intervention of words. In like manner we may not be able to untwist the subtle

threads of that logic, if logic it be, by which the material world is known by the spirit to exist, with its relations to space, and yet to be diverse from the spirit, and to be endued with powers whose energy it measures and whose designs it divines; but the fact cannot be shaken, that the man of common sense holds these beliefs in respect to the fellow-men with whom he has to do, and in respect to the nature whom he seeks to interpret in order that he may control and obey her. Deny to man the capacity for interpreting the thoughts of his fellow-men, and you make him a hermit and an imbecile. Society, with its language and the arts, with its civilization and its amenities, becomes impossible. In like manner, if you deny to him the power to find law and purpose in nature, his power to understand nature and to use nature is at once shut off. But enough of the man of common sense and common life. No one can doubt that he believes in force and law and purpose in the senses explained. All his language speaks it, all his actions manifest it, all his movements are controlled and interpreted by this threefold faith.

We pass to our second inquiry: we ask how far the discoveries and lessons of science modify this natural and necessary faith of common life? And first, in respect to force, does science teach us any less or very much more than we know already? Does the scientist abandon, or outgrow, or overgrow, the views of force in nature which the common man accepts as that something by which agents produce changes and effects, and to which these changes are ascribed as their cause and explanation?

We say in reply, *First*, Science at first multiplies the forces of nature. We mean what are taken to be separate forces, and had been previously unknown. Gravitation is discovered by Newton as a force never

before recognized, whether far or near. Electricity is established by Franklin. The galvanic agency is revealed by its great discoverer. New chemical agents are brought out from their hiding-places, and for the first time show their hitherto unsuspected capacities, which anon cause their discoverer to dance with delight over the new agent which for the first time plays some magic trick, or prostrates him upon the earth by an unlooked-for explosion. The number of separate chemical elements, each with its peculiar effects, is set down for the time being as sixty or more. There are mechanical forces of masses and molecules, modified in gases and liquids; the chemical agencies already spoken of; the crystalline; the vital forces so conceived in plants and animals, involving origination from something living, nourishment from prepared material, growth after a plan, irritability, and in animals sensitivity and intelligence; and, highest of all, the forces of the human soul, the intellectual, sensitive, and voluntary, involving the moral. Thus does science proceed, recognizing differences before unnoticed in the various effects in matter and mind, and ascribing to each of these effects its producing cause, till it has marshalled about itself and learned to recognize the several forces which we have rather roughly enumerated.

Second, The next effort of science is, to unite these forces by finding likenesses in their modes of action, or by transforming them into one another. Science very early recognized as a test of the sameness of a force, that it should produce its effects under common conditions, or so-called laws. Thus, Newton would not for years accept his own theory of gravitation until he had proved that this so-called force in the distant planets acted with a varying energy, just as a supposed similar agency was known to act upon bodies near the

earth. It was an immense step in chemical discovery to be assured that chemical agents enter into composition only in definite proportions. Another important advance was made when it was discovered that chemical elements, however closely united, could be separated by the galvanic agency. This warranted the conclusion, that the force which held them together was a special method of the acting of this newly discovered force. It was not long before the force called galvanic was seen also to manifest the phenomena of electricity proper, then those of magnetism, then those of heat, then those of light, then those of mechanical force; and all these were found to be interchangeable. Nor was it very long before all these so-called forces were accepted as modes of motion, now breaking out in velocity and momentum, and then disguising themselves in the unceasing but unseen play and counterplay of molecular vibrations. This was the beginning of the new doctrine of the correlation or transformation of force, according to which the forces in question were held to be only different names for different manifestations of the same agency, and that, as molecules in motion, each could be made to appear as the other, backwards and forwards, and the *quantum* and intensity of either could be measured by the mechanical work which each could do. This discovery was very generally accepted. Up to this time scientific men had been inclined to find many forces in nature, grouping them together in classes by common relationships. Henceforward the protean agent which appeared and re-appeared in these several so-called forces was regarded as single and supreme, whose nature was declared to be unknown, but whose presence was marked by relations of motion in space. Every one of these groups of phenomena was henceforth explained as a mode of

motion. We do not criticise the logic by which this significant conclusion was reached. We only record the fact.

The transformation of mechanical force prepared the way for the doctrine of the possible transformation of the species of plants and animals. Hitherto it had been held that some hidden agency dwelt in every individual living being, whether plant or animal, which kept it true to its kind, with some room for variation indeed, but with a prevailing tendency to return to the original type. Science begins to conjecture, and learns soon to declare, that there are no fixed species, and no force to hold their progeny to their kinds; that the law of living beings is a law of change and progress, from the simpler to the complex; and that all the present species now living are the products of agencies which for uncounted generations had been developing higher and nobler forms of life from the lower and less perfect. Some had been so bold as to assert that the lowest forms of life had, in fact, been developed from the inorganic. Two difficulties stood in the way of the acceptance of this extreme doctrine. The first was, that no experiment could be brought to prove it decisively and satisfactorily. And yet both Mr. Huxley and Mr. Tyndall are strongly inclined to anticipate it as certain to be established. Mr. Huxley says that the scientist is no reasoner who does not accept it as a theory. Mr. Tyndall says it is a magnificent generalization, too splendid not to captivate the scientific imagination. But Mr. Huxley and Mr. Tyndall both say that every experiment which professes to have developed living out of dead matter has been a palpable failure. The second difficulty is, that no laws that are worthy of the demands of science have been discovered for the forces that conspire in the development of the living

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from the non-living, or from lower to higher forms, much less in the great transitions which the theory assumes. As applied to living species, however, development has been accepted by very many naturalists on grounds of what are called decisive analogies, derived from observation of plants and animals which are now living, and the fossil relics of the generations which are dead. The force or forces, however, which have acted in this wonderful story of progress, have a very low scientific value, whether estimated by a mathematical standard or any scientific formula. The first of these forces is a tendency to vary, such as every man has been aware of who has raised a seedling from a grape or an apple, or every boy who has bred from a pair of pigeons; but this tendency cannot be definitely formulated. The second is the re-action of environment to confirm a variation that is gained, whether air or soil or food, in hostile or favoring conjunction; but this is equally indeterminable, and in its very nature incapable of being formulated. The forces and laws are only indefinite generalizations, founded on vague or imagined analogies between the working of every kind of force with every other, and their relations to heat, light, and kindred agents, or their supposed dependence upon particles of matter in varying forms and movements. Inasmuch as these agents are supposed to depend on differing modes of motion or on different molecular textures, it is inferred, that every agency concerned in the development of the living from the living, and the living from the dead, must depend upon some change in the arrangement or motion of molecules. Hence it is concluded that all the wonderful functions and processes of living beings, including their capacity for development, are brought about by mechanical changes in the matter of which they con-

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sist. By logic of this sort, all the forces which we call vital, in all their varieties of function and of form, of nutriment and growth, of alleged development and of future progress, are reduced by a single generalization to some supposed mode of motion or some adjustment of material particles.

Having established evolution in the production of every thing living, it is not difficult to affirm it of the formation and masses, and the structure and the motions, of the cosmical bodies. A beginning is of necessity assumed of particles of star-dust in a certain condition of motion and with a hypothetical arrangement. This being given, every thing else follows—the massing of the earth in all its phases, its revolutions, the formation of clouds, the generation of light and heat, the consolidation of the melting rocks, the melting and cooling and transformations of the same, the separation of land and water, the generation of plants and animals, etc.,—in the way already described. Man himself, and all that pertains to him, his form and structure, his organs and their functions, his brain and his mind, his heart and his will, his character, his civilization, his history, his institutions, his morals and his manners, his aims and his destiny, are all held to be the products of certain particles which originally found themselves in motion, from a rarer to a dense medium.

These extreme views are far from being accepted by the majority of scientific men. Very many of the most eminent reject them as romantic dreams. They are the extremest doctrines which could possibly be reached by science in its reach after unity; i.e., in its effort to resolve into a single force the many which science at first seemed to discover. It falls not within my purpose to examine the truth of these views. I have simply to ask what new light, so far as they are true, do

they cast upon the scientific conception of force? In other words, what change is made by science in the views of force which are held by the man of common sense? So far as I can see, it makes no change at all. Conceding that all phenomena are to be referred to changes in the particles of matter, and that these changes have succeeded one another in a progressive order from the simple to the complex, then all the forces of the universe are resolved into the capacity of these atoms to move in certain directions and at certain rates. I need not say that the capacity of matter for motion is the first form in which force is known to the child, and continues to be known to the man. So far as science explains phenomena by this single force, it employs a conception which is thoroughly familiar to the common man. Men of science are ready to confess that they cannot define force, and are nearly agreed, that after searching the universe to master its secret, by sense, imagination, and reasoning, they are forced to come back to the simple conceptions with which they set off when they crossed the threshold of science.

Leaving force, we proceed *to law*. We have seen that the child and the savage have a correct notion of law, so far as they have occasion to apply it. They believe that effects may be produced by combining the agencies of nature after a certain fashion. The boy flies a kite and sails a boat by uniting two forces. The man applies a lever by a similar process. As we learn new forces, we invent new methods of combining them, in order to reach definite effects: when unusual effects or phenomena occur, we endeavor to explain them by supposing a combination of forces which we have never observed. By and by we learn to measure by number the energy of the forces which we employ, and then the directions in which they are applied, and the spheres

to which they extend. In other words, we begin to express the laws of force in mathematical relations. Herein lies the secret of the progress of modern science, that it estimates and defines the conditions of phenomena in terms of number and magnitude. To this, astronomy owes all its precision and nearly all its discoveries. Mechanics and gunnery, hydrostatics and engineering, chemistry and molecular physics, all depend on the magic of algebra and geometry. These abstract relations make the conditions absolutely definite and precise. The application of mathematical tests has established whatever truth there is in the doctrine of the correlation of forces, and given plausibility to the hypothesis that all the qualities of matter, whether organic or inorganic, whether chemical or vital, are owing to the different rates and directions in which the ultimate atoms move. Let one example suffice. The ultimate molecule of oxygen has its well-known sensible properties, and its different capabilities when united with the other elements or bases with which it is known to unite in different proportions. Let it only be admitted for a moment, that all these various capacities of combustion, detonation, acidification, corrosion, etc., are owing to the number of ultimate atoms of which the ultimate molecule is composed, to the rapidity of the tension or the vibration of each, or, it may be, to their gyrations or revolutions; let it also be supposed that all these are capable of being expressed in mathematical symbols, — and you have an example of what many believe to be the ultimate explanation of all the cosmical phenomena. That this is the farthest possible from being proved as yet of the forces that are assumed by the evolutionist, even of the most moderate school, has already been explained. So much for the conception of law, which is rightly conceived as

the distinctive characteristic of modern science. Law is not a force, but it supposes a force already existing. It expresses a regular mode in which a force acts in producing an effect, either alone or with other forces. Inasmuch as no effect in nature is produced by a single force acting alone, but is always the result of the joint action of several, the known action of one force is often spoken of as conditionating the other. In this way it happens that a law of nature is often conceived of as though it were a force in nature; because, forsooth, the presence of the second force, or the particular manner or direction of the action of the first, is a condition of a definite result. These conditions are believed to be fixed. It is only as fixed that they are called laws, only as unchanging that they are said to regulate the processes of nature and the actions of men with respect to them. All science assumes that these laws are unchangeable and trustworthy. For all these reasons, it is not surprising that by many the laws of nature have been conceived as separate and independent agents, not laws given or imposed upon force, but law-givers and law-makers of themselves, independent and irresponsible actors, owing allegiance to nothing higher, and exacting allegiance from every other thing and being. So much has science learned concerning law in nature.

What more does she teach than the common man, than the common boy, has already recognized? We answer, nothing new in kind. The boy who flies a kite knows that the force which he employs to lift his kite will only help him on certain conditions: the savage who uses a bow or a rifle knows, that, when the wind is high, he must aim in accordance with the force which would blow his missile aside. The boy and the hunter believe these conditions to be uniform and fixed. The accomplished scientist enlarges the rude formulæ of

each into intricate propositions concerning the composition of forces, which he applies, not only to projectiles, but to pressure and resistance, to the tension of solids and liquids and gases. The only difference between the two is, that, where the boy and hunter know one law, the scientist knows a thousand; where the former can only rudely apply their rules to a few cases in their own practice, the scientist formulates them in mathematical expressions, and applies them in a myriad of cases; whereas the knowledge of the one terminates with themselves, or some rude traditions which they hand on to the next generation, science in some sense gives the next generation the advantage of starting at the goal which the preceding had already reached. But, as to the nature of law and its relations to force, there is no considerable difference between the unscientific and the scientific man: the one understands each as completely as the other. Perhaps the scientific man, for the reasons already given, is of the two more likely to misconceive law, and to esteem it an independent and self-acting force, to personify it as a demi-god, half intelligent and half impersonal, or deify an hypostasized abstraction.

We come last to the belief in *purpose or design in nature*, and ask what changes in our notions of it or our confidence in it are wrought by science. Let us recall to mind the truth that the unscientific man assumes that every thing which is done in nature is done for a purpose. He does not learn this from experience, but he requires this belief in order to learn any thing from nature. It is with his belief in purpose, as it is with his belief in force and law. He does not weigh the evidence for and against, and at last decide that the evidence preponderates in favor of both; but he opens his eye and mind, and inquires what force or forces produced them, and under what laws or conditions these

forces acted to this result. Similarly he inquires *for what end do they take place*. He may not be able to answer any of these three questions in respect to many events or phenomena, but nevertheless he is compelled to ask them all by his belief that an answer to them all is reasonable. This is the position of the unscientific men in respect to purpose. We inquire next, Does science teach man to take another position? and, if so, what is it? Are the facts of science or the discipline of science fitted to lead the student of nature to believe more or less firmly that nature is controlled by design? This is the one question for which this study was undertaken. What is our answer?

In reply, we notice first of all, that, if modern science by its own confession has learned nothing and can teach us nothing in respect to the nature of force, it has divided and subdivided the points from which every form of force proceeds to an extent which severely taxes our faith, if not our credulity. The molecules which are packed into a cubic inch of any species of matter are now counted by the million, and the atoms into which each is subdivided are counted by we know not how many more; and these atoms, if we adopt one theory, are capable of manifold motions. Upon these motions, if we believe one theory, the special qualities of the molecules depend: if we accept another, each molecule or atom is endued with a capacity of its own to act in accordance or antagonism with manifold others; having the aspect, to use Clerk-Maxwell's phrase, borrowed from Sir John Herschel, of being manufactured articles. Of course, if this is true, every one was manufactured with some definite design. Let this mass of matter be heated, every one of this myriad of particles is set in motion in a peculiar way; pressing against one another so as to expand the bulk of the mass, and with such

irresistible energy as to set in motion the particles of all the bodies near itself. If it is a cubic inch of water, they are separated into steam ; or, if some unstable chemical compound, the mass is at once decomposed into its constituent elements. If it is transparent, its particles are interpenetrated by an undulating ether, whose undulations are variously affected by its substance giving to the eye which is near all the refracted colors, or, moving onward for miles, they excite another eye which is waiting to respond. How many countless actions and interactions between these moving particles or points of force within so narrow a space ! So far as we can see, every particle meets with a response in every other after a definite manner and a uniform law, the same here as there, the same now as then ; whether the here is in this apartment, and the there is in the remotest fixed star, or in the earth's unvisited centre ; whether the now is at this instant, or was in that morning when the stars sang together in their first harmonious note, when all these conspiring atoms greeted one another as friends. If we think of the energy of these agents, as well as their variety and number, our convictions are deepened that they were designed for one another ; that is, were fitted to act upon and with one another in definite methods and to definite results. A cartridge of dynamite makes us shudder to look at it. Our terror is allayed by the thought, that its power to do mischief is limited to the presence of one or two conditions, and that these conditions of its exploding will never change. Had we no belief that every agent was thus fitted to every other, we could not but tremble at any possible catastrophe which the seemingly most harmless object might occasion. Modern science has, by its discoveries, multiplied the suggestions of possible disorder a million-fold by the insight she has afforded into the

constitution of the earth and the air and water, and their relations to light and heat. She calms our terrors effectually by confirming our confidence in the fixedness of law. But she best establishes our faith in law by assuring us that every agent and every force was designed to act with every other for some rational end. Some of us at evening have encountered a knot of midges moving hither and thither in a compact and yet severed mass, winding backward and forward along their mazy paths, as though they were weaving a many-threaded tissue, never jostling, though seeming ever just about to meet, keeping their form as a whole, which proceeds as though directed by a single will, and yet is all alive with individual activity. This is a feeble picture of what science teaches is going on in the most solid masses of matter as they are quietly transformed by manifold workings within. It is utterly inadequate to set forth the currents and counter-currents that make up the palpitating life of a growing tree, as it weaves the texture of stem and bark, of bud and flower, as it compounds by subtle selection and recombination the nourishing fluids from the earth, and lifts them up along the lofty channels, to elaborate them in the leaf, by subtle exchanges in the air, and then to compact them at last in the new year's growth. Our illustration would be a mockery of the changes in the animal economy, as they appear in the glorious universe of sentient beings. Yet science has soberly taught us to regard the cosmical system itself, from the largest masses to the tiniest molecules, as a vast aggregation of atoms, each held in place and form by acting with and counter-acting one another. Let certain of these forces cease to act in the same proportions as now, and the earth itself would fly into tiny fragments as suddenly as one of Rupert's drops; and the words of Shakspeare would be

literally fulfilled, as the great globe itself, and all which it inherits, would leave not a rack behind. The tiniest flower which hangs by a thread over a rushing stream is not kept in its place more truly by that thread, than the thread and the crumbling verge on which it hangs are held in place by forces which come from the Sun and Jupiter and Saturn. Some of us may have stood on the old tower which once overlooked the principal cascade of the falls at Niagara. If so, we shall remember that the spectator looked directly upon the stream as it sweeps over the unseen verge many fathoms deep, smooth on the surface, forever shattered, and yet the same forever. As one peers beneath this treacherous surface, he sees the masses of foam in moving pillars, which perpetually rise and are constantly broken, ever newly created, ever dashed into myriads of glittering and many colored drops, giving to the eye and the mind a vivid impression of chaos itself. But there is no chaos there. Substantially the same forces are repeated for ages, the same colors are maintained, the same pillars stand, though always falling, except as there are slight variations in the quantity of water, the forces of wind, the light of the sun, with now and then a breach in the rock beneath. We have in this scene an image of the universe as known to science. The matter is fluid : the forces might change, their laws only are unchanged ; because these are adjusted by purpose as it has adapted the one to the other. The unstable yet permanent cataract is an apt image of the universe as modern science beholds it, made up as it is of motions and commotions which are so subtle, so noiseless, so manifold, so tremendous, and yet so nicely adjusted and so peaceful, that nothing seems so stable.

Let us return to our image again. I said that now and then a break in the rock beneath changes the form

and inner movements of the cataract, and we know that the cataract itself has notched the records of the ages of its retrocession upon the rocks by its side. So the universe, as science teaches us, is not stationary in its forms. It has passed through varied phases, each of which has been developed largely from the preceding under unchanging laws. Whether a creative force may now and then have intervened, or is ever fulfilling its behests by a plastic energy, we do not here care to inquire. We have to do only with the forces which all believe to be fixed in their actings and laws. If purpose, as we have seen, is required if we would explain the harmonious action of the forces which act in any present phase of the universe, purpose is also required for the more numerous and complicated adjustments which are involved in the development of one phase from another. If the adaptations are many which hold the elements of a growing tree or a living body together, those are far more numerous which are involved in the changes in form and structure and function which follow one another in regular procession, for a century of life. But what is a century of the life of a tree to a thousand centuries of one of the fermenting geologic periods, with its meltings and its freezings, its upheavals and depressions? But, in each, every particle of matter has had some share in the enormous mechanical and chemical changes, by heat and cold, by water and fire, which have prepared the earth for life, — each phase in its order, the simpler before the more complex, till the structure was complete. If we suppose a controlling design to be present, and that the law of progress marshals, impels, and guides every mass and atom in this procession towards a completed plan, then development is explained as possible. Mr. Huxley says, and he says truly, that it is a fundamental proposition of evolu-

tion, "that the whole world, living and not living, is the result of the mutual interaction, according to definite laws, of the forces possessed by the molecules of which the primitive nebulosity of this universe was composed. If this be true, it is no less certain that the existing world lay potentially as the cosmic vapor; and that a sufficient intelligence of the properties of that vapor could have predicted, say, the state of the fauna of Britain in 1869, with as much certainty as one can say what will happen to the breath on a cold winter's day" ("Critiques," etc., p. 305). This is very true. Now, let us suppose that a master in science had selected for his study that portion of nebulous matter which was to constitute the brain of the most sagacious dog in 1869. We had almost said the brain of Mr. Huxley himself, as Shakspeare makes Hamlet trace the noble dust of Alexander till he finds it stopping a bung-hole. If he knows the definite laws of this nebulous mass so thoroughly as to see it in Mr. Huxley's future brain, he must know what it can be and do with reference to all the other particles with which it will need to act, and follow its future activities through all the phases which it will assume till it emerges into an intelligent brain, and begins to think. The man who could predict this orderly progress from what he sees in these particles of nebulous matter, we should say, sees in them the *plan of their development*. We cannot doubt that a plan is involved in the very constitution of these particles, which is understood only as these progressive possibilities are discerned. If the particles were to be created with this constitution and surrounded by their fellows by a being who had anticipated in his mind their history, we should say at once that design controlled their existence and the developed activities which were to follow. If law regulates the result of the combined activity of

two forces or two millions of agents in present harmony, and if law would seem to indicate thought and reason, how much more does the orderly development of such forces manifest design when long periods of time are required! It follows, that if we accept what is called a tendency to variation, of which Mr. Darwin makes so much, or the tendency to differentiation, on which Mr. Spencer insists, and use either to account for the evolution in which all scientists believe, then we must suppose each to act under the steadying direction of design for unnumbered generations, or the result would be indefinite vacillation. If, for example, a collection of nebulous vapor should start on the road of transformation which it must travel for some millions of years till it lands in the brain of Mr Huxley, full panoplied for a sturdy fight with every dissentient, it not only has a long road to travel, but a road which must steadily tend toward this single goal under the influence of all the attractions and repulsions which it encounters on the way. If the particles concerned are at the start shunted off by an impulse which they can continue to sustain, all is right; but unless this destination is assigned, and every arrangement is made to hold them to it, it is a mere chance whether any regular tendency can be maintained. There will be serious hazard of fatal disturbance and confusion. If we resort to the survival of the fittest, we find the same difficulty in supposing that the crowding atoms which line this hyperbolic pathway will push for billions of ages with such an even pressure as not now and then to trample down even the fittest, or push them off to another track. But enough of evolution and progress, in regard to which scientific men are not all agreed. It is time that we had returned to the beaten highway of methods and truths which are accepted by all.

Science requires exact definitions, or a precise and complete enumeration of the properties which separate one class of objects from another. As in common life, so in science, the most satisfactory definition states what any thing exists for in relation to other objects, or, as we say, assigns its place or function with its neighbors in a rational system. Let three straight lines be drawn separately from given points. Apart from one another they are three straight lines only. But as soon as they are seen together in their several relations to one another, as parts of the triangle which they constitute, they are defined by the triangle for which they are drawn, and which, by being drawn, they create. A hundred sticks of timber lie confusedly in a heap. Each may be defined as sill, or joist, or rafter, according to the use for which it is designed or best fitted in construction, as the frame of a house, or bridge, or stable. Every object which we define, we define best by its function ; and one or another function or relation is selected as best according to the place which we give the object in the system of things, or the purpose to which it is to be applied.

We classify on the supposition that certain groups out of the tens of thousands which we might make are significant, and are likely to be permanent in the designs of nature ; and that the characteristics which we select are permanent in these permanent groups, and will help us to interpret other capacities and adaptations. In other words, we suppose that certain groupings of nature, certain qualities by which we collect and marshal them, are of greater significance in the designs of nature in respect to science or practical life when we gain a step beyond the classification and naming which other people do for us, and begin to theorize and invent and discover for ourselves. In other words,

when we look below the surface of things, the language by which we describe our processes seems to take for granted that design is what we are searching after. We inquire, as we say, into the meaning of things, their true intent, import, and significance, the ideas and secrets of the universe, etc. Every artisan, experimenter, and inventor, every florist, pigeon or dog fancier, every stock-breeder, as truly as every discoverer of great laws or truths, tries first to guess, and then essays to confirm, what this or that sign imports. All the poetic and idealized representations, all the mythological conceptions concerning the favored child of nature, her consecrated priest, her chosen devotee, proceed on the single assumption that nature itself is controlled by design in her own processes and in her modes of making them known.

We have already seen, that the belief in the laws of nature, in the regularity of their action, or the mutual and steady adjustment of one force to another, is but another form of assenting to the truth that design and thought are supreme. The circumstance that scientific men often stop short with these laws, without asking themselves what their belief in law implies, proves nothing except that they are so occupied with this or that special line of investigation or inquiry as to leave little leisure or occasion to inquire whether a purpose underlies law. The exclusiveness of their occupations, with the very concentration of their inquiries within these limits, and the current religious belief which connects nature's laws with the Supreme Being whom they worship, render superfluous any speculative thought upon the purposes or designs of nature. Now and then it happens, that a very able and truth-loving student forgets, in the fervor of his faith in law, that any inquiry in respect to the grounds of this faith is

required, or admits of a rational answer. Others confound laws with forces, and personify their confused conceptions of both, and assume a position of contemptuous defiance towards any thinker who asks them to give a reason for their faith in these abstractions. Notwithstanding all this, the fact remains true, that modern science has myriads of more occasions to believe that nature is palpitating with thought than had ancient or modern common sense or ancient science. And yet it not infrequently happens, that the objects of inquiry are so many, that the phenomena are so engrossing, and the questionings and explorations so fascinating, that the grand impression of the universe as a whole fails to be responded to.

We observe, in conclusion, that the truth that design controls the universe, alone furnishes science with a satisfactory conception of *nature*, of *man*, and of *God*.

By nature we mean the material part of the universe. Here we are met again, notwithstanding all that has been reasoned on the subject, with the obstinate questioning, How can dead matter express objective thought? We answer by the questions, Does not animated matter at least express, not thought only, but feeling as well? Do you doubt the existence of the spirit of your friend, or the thought which flashes out from within the recess which has never been penetrated except by himself, and writes itself upon the face which encloses and veils it? Perhaps the reply will be given, that, if we allow that animated matter can reveal the thought which it expresses by word or look, it does not follow that matter of another sort can reveal design, much less that it can manifest feeling. We answer it can, because it does, and in cases which all men feel and no one will dispute. Take any one of the automatic machines with which we are now so familiar; e.g.,

the very common machine for setting card-teeth. Notice how the wire is first reeled off and shortened as fast as it is required, then cut at the requisite length, then seized by the iron nippers which are thrust forward at the moment, then drawn back at the instant and looped, then bent at the suitable length; observe how the end of each tooth is sharpened, then confronted with the leather flap, which has been pricked in advance by a special apparatus worked by the machine, then thrust in; and meanwhile, as the leather slips forward, other holes have been provided; and the process already described has been perfected with another looped tooth, which is at once sent home to its place. When a single row has been completed, the flap is slipped upwards so as to remove the finished row of teeth; and then it proceeds on its course, and is ready to meet the repetition of the successive processes which have preceded in orderly succession. Is not thought made visible here? Do not indications of design flash from every one of these movements so vividly and impressively, that we almost think or say the machine is insouled? Is it said that this is because we have seen the construction of similar machines, and that any work known to be of man, or contrived by the mind of man, may naturally be interpreted through another like itself? To meet this difficulty we select another example, — Faber's talking-machine, which was copied after an apparatus never made by human hands or devised by human thinking; of larynx, with pipe and reeds, with pharynx and roof of mouth for resonance, with tongue for pressure against palate and teeth, all capable of regulation by the lips for finishing and modulation of sound, and yet controlled by a few keys that regulate the actings of larynx, tongue, and lips upon the air that is furnished from a common kitchen-

bellows. We almost start with surprise when, as the attendant touches the keys and plies the bellows, the machine utters so distinctly, "*I can speak English. Sprechen sie Deutsch? Parlez-vous Français? Constantinople, Mesopotamia.*" But this, you say, was imitated from an apparatus already in existence. But what was copied in that apparatus? — the parts of it? Not alone the parts as such, in shape and quality of material, but the parts as adjusted to one another in the production of articulated sound, seemingly with the design of producing spoken language. But, if so, then the design must have existed, and been made manifest through the structure itself. Is it said that design is thought into the natural talking apparatus, after analogies from manufactured whistles and reeds, etc.? This is sometimes said; and it is charged as unscientific that man's reason in adjusting means to ends, under the limitations of his materials, is made the norm and measure of an imagined thinking in nature. This and nothing else is the meaning of the current charge of anthropomorphism made now so freely, as though nature were belittled and dishonored by having her thoughts interpreted by the analogies furnished from the highest of human processes. We reply, Science is and must be anthropomorphic so far at least, that man must exalt the authority and the trustworthiness of his own intellect if science is to stand. If the interpretation of design in nature is anthropomorphic, then the discovery of that geometry in the heavens by which every eclipse is foretold, and the Nautical Almanac is computed, is also anthropomorphic.

This leads me to add, that design in nature alone assigns to *man his true place in nature*. If I am asked what I mean by man's true place, and am told that I beg the question by assuming that man has any place (i.e.,

any destined or designed place), I answer, I mean, by man's true place in nature, that place on the one hand which Science must assume for the intellect of man, in order that Science herself can maintain any consistency or assert any authority, and the place on the other which the morals and manners, the laws and institutions, of man must assert for his hopes, his obligations, and his rights. These are strikingly contrasted with the place and authority which are allotted to man's intellect on the supposition that man is the temporary product of material force, and with the dignity and destiny which are accorded to man's desires and hopes, on the theory that he exists for a few years, to be dissolved into his original elements, and to re-appear in other forms of being and action. If Science has any authority, the intellect of man must, in a sense, assume to judge the operations of nature, and interpret them by its own. It finds that its own operations are controlled by design so far as they are rational at all, and it cannot but believe that the same is true of the regulated operations which nature presents for its interpretation. In doing this, the intelligence of man assumes permanent authority to judge of the past and the future by relations and rules which are supreme and abide forever. Science, in a sense, must assume for man *kingship over nature, and thereby kindred with God.*

If we take the other view, viz., that man, being the product of nature, is just what nature makes him by the temporary development of her progressive agencies; this and nothing more in his intellectual powers, and in the relations by which he judges, mathematical, causal, law-interpreting, design-interpreting, — then Science is dethroned, and man is dethroned with her. His relations are only his modes of looking at things as long as he lasts, but there is nothing true in things which corre-

sponds to them; therefore all and both the subjective processes, and their imagined objective counterparts, will disappear at the next turn of the wheel, when man is whirled off into something else. But what will become of science if this theory of man is true? If man's view of nature is anthropomorphic, then science is necessarily anthropomorphic. If man assumes too much in finding design in nature, then, by the same rule, he assumes too much in finding any thing in nature; force or law, yes, even in finding in it number and geometry. To deny *design* in nature because it is anthropomorphic, requires us to deny *force and law* as well. It should never be forgotten, that what we call science is the product of human thinking; and, if we do not assert for man and the thinking of man its appropriate authority, then science should bow itself off the stage. Science in these days is not very willing to be bowed off the stage; and it ought not to be, and for this reason it ought to assert a place in nature for man as a knowing being; but this it cannot do, unless it finds that design in nature which assigns to man supremacy. Next, if design rules in nature, there is also a place in nature for man as an emotional and voluntary being. This is assumed in all our social and political theories, in our ethics and our politics, in our institutions, our laws, in all that we say of human duties and human rights. All these take for granted that man is able to recognize all these relations, and that some of them are supreme over all others, in our estimate of man's position in the intentions of nature. Those who deny design must necessarily regard moral relations as the changing products of social sympathies and antipathies. They must interpret conscience to be the reflex of advanced experience and capricious fashion; duty, the command of the majority; right, to be what is con-

ceded by the will of the strongest to the weakest party. They must assert that man's destiny is to die and to rot, and that is the end of him. His future life is an impossibility : and his destiny after this life is over is but a phantasm or a dream, except as the thoughts and feelings which he has evolved live on in the impulses which they have imparted to the thoughts and feelings of other beings who follow ; for there is and can be no other future life.

This is a short statement of the ethical, sociological, and political creed which is taught by those who find no design in nature, or who make every thing which gives man his dignity and self-respect to be the product of social environment plus a more or less considerable variation of individual impulses. I need not argue that such a view destroys conscience and degrades man, that it makes the educated and cultured more selfish and grasping, and the uneducated more discontented and revolutionary. It claims to be very new, with its sounding abstractions and its scientific pretensions. It would be easy to show that it is as old as Lucretius and Hobbes, and that it is dangerous in proportion to the confidence with which its want of coherence is disguised and its immoral tendencies are hidden, even from its advocates, by its high-sounding language, its rhetorical speciousness, and its arrogant dogmatism.

The assumption of design in the universe justifies the faith of science in *a personal and intelligent Creator*. Justifies? I had almost said it requires this, in order that the intellect may rest in a completed idea of a well-rounded universe. A creator is a being who originates all the active beings, and imparts all the force or forces which exist, and who regulates their mutual activities by the laws which he has imposed upon them to accomplish the designs which he proposes, in the existence,

the development, and activity of the material and spiritual universe. You may try in vain to stop short at any view of the origin of things without designing force, if you hope to provide for science. You may try the theory of force only, as Spencer does, and refer this origin or existence of things, as he does, to a persistent unknown and unknowable power, unlimited in space, and without beginning or end in time. But in this conception you have all the mystery which pertains to a self-existent personal Creator, with no advantages. You have a being who is himself unexplained, and who himself explains nothing. But what next, according to Mr. Spencer? Why, somehow this unknowable power appears as acting through or upon a mass of matter which is in a state of unstable equilibrium, in which there is provided potentially all the events and beings which are to be developed in the future history of the universe. How it happens that each separate particle is in its place, with its wondrous potencies and promises of vegetable and animal life, of heroes and battles and philosophers, of lords and ladies gay, of saints and fiends, is not explained. How each happens regularly and progressively to act, no one can explain.

But all the future is here. Here is destiny, but no design. There is law here, because each particle which stands or moves in this star-dust must act with every other particle according to the capacities of each to condition the other. There must be progress steady and onward, we are told, according to a law which sets in motion a set of constantly shifting and changing partners, every figure being more complicated than the other, till the dance is out. Here again is destiny, — the destiny of evolution, destination with perpetual progress, but no design.

Take now the other view. Let science recognize

purpose, and there is explanation of law. The force of every individual agent is the condition to every other so far as they act in mutual dependence on one another. Admit evolution, even in the extremest form, and concede that every thing has been produced out of the original star-dust. Even then we need not ask which best satisfies the demands and the discoveries of science; which is the best working hypothesis, — this theory of a personified force, or the theory of an intelligent Creator, whose thought preceded the act which called the universe of forces into existence, fixed them under law, in obedience to designs of love which blessed beforehand those beings who were to interpret in science, and imitate in art, and honor in worship, the one knowable God, — knowable by them, because made in his image.

But our study has been too much prolonged. We conclude with the words of Lord Bacon: "It is an assured truth, and a conclusion of experience, that a little or superficial knowledge of philosophy may incline the mind to atheism, but a farther proceeding therein doth bring the mind back again to religion; for on the entrance of philosophy, when the second causes which are next unto the senses do offer themselves to the mind of man, if it dwell and stay in them, it may induce some oblivion of the highest cause: but when a man passeth on farther, and seeth the dependence of causes and the works of Providence, then, according to the allegory of the poets, he will easily believe that the highest link of nature's chain must needs be tied to the foot of Jupiter's chair."

X.

PROFESSOR HUXLEY'S EXPOSITION OF HUME'S PHILOSOPHY.¹

PROFESSOR HUXLEY is always an interesting writer, whatever may be his theme. He never fails to be clear and forcible, and he is usually both vivacious and amusing. It is true, his positiveness makes him defiant and contemptuous of men and opinions of whom and of which he has very little knowledge, and ought to say little or nothing. And yet his ignorance is often so complete and unconscious, that his positiveness becomes diverting; while his self-complacent good-nature is always so manifest, that the critic loses all sense of irritation in sympathy with his author's serene self-satisfaction, and abates even much of moral displeasure at his frivolous trifling with the most important moral and religious truths, by reason of the succession of surprises which his audacious paradoxes occasion. Professor Huxley may not inaptly be styled the William Cobbett of our current philosophical radicalism. He is like Cobbett in acuteness, directness, humor, and earthliness. He is like Cobbett in the clearness, directness, and vigor of his style. Above all, he is like Cobbett in being never weary of "having a fling at the parsons."

The writer informs his readers, that it was at the desire and suggestion of Mr. Morley, the editor of the series of "Biographies of English Men of Letters,"

¹ Hume: by Professor Huxley. New York, 1879. The Princeton Review, November, 1879.

that he undertook the task of writing upon David Hume. He half apologizes for his audacity in making the attempt, inasmuch as he does not profess to be himself a man of letters. He excuses himself, however, by the consideration, that Mr. Hume has at present greater significance and reputation as a philosopher than as a literary man, and that his own familiarity with science in some sense qualifies him to write upon Hume's philosophical system.

The reader who is at all familiar with the special signification in which the term science is persistently used by men of Professor Huxley's way of thinking, as synonymous with physics, will perhaps be surprised that he should find any meaning or place left for philosophy, either in his thinking or his terminology. That he attempts to find both is made to appear as he proceeds. Indeed, this biography derives its chief importance from the circumstance, that it is an elaborate attempt on the part of an ultra-physiological materialist to recognize, after a fashion of his own, the significance of the problems which have been proposed by metaphysicians proper, and to solve them in such a way as to reconcile Hume with Kant, Locke with Descartes, upon the irenical basis furnished by the metaphysics of associationism and the psychology of cerebralism!

Professor Huxley divides his treatise into two parts, entitled respectively "Mr. Hume's Life" and "Mr. Hume's Philosophy," the first occupying forty-five, and the second one hundred and sixty pages. The biography states concisely the principal external incidents of Mr. Hume's life, and the salient features of his character as seen by the common eye. So far it is well enough. And yet we cannot but regret that a life and character so eminently individual and original, and so suggestive of the times, had not been treated by a

writer competent vividly to conceive and graphically to depict both the man and his age. Indeed, for a biographer of the requisite intellectual and moral qualifications, we cannot conceive a finer subject than Hume the man, and the man of letters. A life of Hume, both as a man of letters and philosopher, vividly conceived and graphically set off by some just and lively portraiture of his times, might be given within the compass of one of Mr. Morley's volumes, and be a priceless addition to English biography, were it written by more than one man whom we could name. But then, how different would that man be in his stand-point from Mr. Huxley, and how different would be the impressions and lessons from the story and the criticism!

Part II., on "Mr. Hume's Philosophy," was doubtless designed to be, what Professor Huxley describes it, an "exposition of Hume's philosophy." He informs us, that, in preparing it, he "applied himself to the task of selecting and arranging in systematic order the passages which appeared to him to contain the clearest statements of Hume's opinions." He adds, he should have been glad to confine himself to the comments which might serve to connect these excerpts, but excuses himself for overstepping these limits by "an ineradicable tendency to try to make things clear." The reader would expect from this announcement to find a tolerably complete statement of Mr. Hume's philosophical opinions, made clearer, perhaps, by explanatory remarks, with here and there a brief criticism interposed, or perhaps a supplementary observation. He would certainly have reason to look for very much of Mr. Hume's philosophizing, and very little comparatively of Professor Huxley's. He may reasonably be surprised, therefore, when he finds that the treatise contains as much or more of Mr. Huxley's philosophy

than it does of the philosophy of Mr. Hume. He could not object to an exposition of Mr. Hume's philosophy in Professor Huxley's own language. He would have no reason to be offended had Professor Huxley now and then expressed his own dissent from Mr. Hume's opinions, and his reasons for the same. Nor, indeed, could he reasonably complain had he drawn his illustrations, confirmations, or refutations from modern science, whether physiological or any other. But he may certainly feel some surprise to find that the philosophy is, in the main, Professor Huxley's, re-enforced now and then by Mr. Hume's, and not infrequently substituted in place of that of the great Scottish leader. The treatise is certainly a striking example of the tendency of modern physics and physiology to rush into metaphysics. It is certainly not the first time that Professor Huxley has essayed an attempt at philosophy. His well-known lecture on Descartes seems to have prepared the way for his discussion of Hume; resembling it strikingly in its manner of treatment, its conclusions, its audacity, and its blunders.

It is comparatively of little consequence, however, whether the present treatise ought to be called Mr. Hume's Philosophy or Mr. Huxley's. So far, however, as it contains the latter, it invites and demands a candid criticism, even though the results of such a criticism should show that the author's "ineradicable tendency to try to make things clear" has resulted only in making clear his own failure to vindicate his materialistic and atheistic conclusions, even with the authority and prestige which he sought from Mr. Hume.

Before entering upon this critical examination, we would call attention to the hope expressed by the author, "that there is nothing in what he may have said which is inconsistent with the logical development of

Hume's principles." This suggests the important question which has been agitated by critical students; viz., whether Hume held any fixed and logical system of philosophy, either in its principles or conclusions. Hamilton insists that he was not a dogmatist, but a sceptic; that he did not assert his own principles, nor proceed to derive from them their logical consequences as his own conclusions, but expounded the principles of the received philosophy, i.e., the philosophy of Locke, with the inferences which these necessarily involved; leaving it for his readers to decide whether the inferences disproved the premises by a *reductio ad absurdum*, or whether the difficulty of reaching or phrasing any trustworthy *data* might not justify a sceptical distrust or despair of any philosophical exactness of statement (Met. Lects., xvi., xxxix.). There is much in the spirit of Hume's earliest treatise which would indicate that he often wrote in a spirit of mischievous banter, which found its chief delight in puzzling the average mind with the lucid statement of current metaphysical theories, and the logical derivation of incredible paradoxes from the premises furnished by the received philosophy. As we follow the movements of his mind in his later treatises, we find him more cautious of dogmatism, more guarded and *suave* in his manner of writing, and more careful to avoid giving offence to other thinkers, theologians being always excepted. His famous "Essay on Miracles" is as remarkable for its sly indirectness as it is for its skilful argumentation. Even the dialogues on Natural Religion, which he declined to publish during his lifetime, indicate a singular indecision or indefiniteness of philosophical opinion united to a sensitive timidity in avowing his real or even his prevailing conclusions. Hence the question has often been raised, and never satisfactorily answered, which

of the personages in these masterly dialogues represented his own sentiments. The most plausible answer to this question seems to us to be, that each of them represents Hume in one of his varying moods; and all together bespeak a man who was gifted with great intellectual subtlety conjoined with the mastery over a singularly lucid style, but was perpetually vacillating with the changes of his own half-formed convictions. There are strong internal evidences in his writings, that the statements are true, which Huxley treats with such lightness, that Hume in his more earnest moods relaxed from the frivolous temper which he usually assumed when he touched theological questions or religious truth.

Professor Huxley is no such man. He is downright in the opinions which he holds, and outright in expressing them. He is least of all an Academic, but, as Sydney Smith said of Lord Macaulay, "is always cocksure of every thing," — of the worthlessness of what he calls "pure metaphysics," of the scientific certainty of his biological psychology, — in short, of every point of the philosophy which he finds in or reads into Hume, and of the conclusions which he deduces from it. Every step which he takes is positive and firm. He would have his readers believe that Hume was the forerunner of the modern metaphysics, of which Mr. Huxley is the acknowledged head in physiology, Mr. Bain the most distinguished analyst in psychology, and Mr. Spencer the most profound and comprehensive philosopher and theologian. He goes even farther in his sanguine positiveness. He tries to persuade himself and his readers that Locke, Descartes, Spinoza, and Kant all approximated on many points to the same principles with himself, and are worthy of the very highest respect in the temple of the new philosophy.

Professor Huxley begins his exposition with a chapter on "The Object and Scope of Philosophy." It is worthy of note, that at the very outset he recognizes a distinction between science and philosophy. Both have to do with knowledge. Philosophy attempts to answer the question, What can I know? "What is commonly called science, whether mathematical, physical, or biological, consists of the answers which mankind have been able to give to the inquiry, What do I know? They furnish us with the results of the mental operations which constitute thinking; while philosophy, in the stricter sense of the term, inquires into the foundation of the first principles which those operations assume or imply." He soon discovers that this comprehensive question can be answered satisfactorily only by that analysis of the power of knowing which we call psychological. Thus far we find no difficulty in keeping company with the critic, when all at once he brings us to a pause by turning upon us with the assertion, "*Psychology is a part of the science of life, or biology*, which differs from the other branches of that science merely in so far as it deals with the psychical instead of the physical phenomena of life." From one point of view, this assertion might be considered as harmless enough. From another, it simply begs a score of questions, and commits us to his entire theory of physiological, not to say materialistic, philosophizing. He supports this view by the remark, that, as the physiologist studies "functions," so the psychologist searches after "faculties." He adds the not very original or profound remark, that mental phenomena are more or less affected by bodily states; and that, as in physiology we must know something of physics, which treats of the lower operations of the body: so in psychology we ought to consider those higher functions of which physiology treats. From all

this he concludes that psychology and physiology must follow the same method of investigation, and can differ only in the subject-matter with which they are concerned. That psychology has a special subject-matter he defends against the positivists, but not before, in almost the same breath, he had turned against the "pure metaphysicians" who "attempt to base the theory of knowing upon supposed necessary and universal truths, and assert that scientific observation is impossible unless such truths are already known or implied;" apparently forgetting, that two pages earlier he had affirmed that "philosophy, in the stricter sense of the term, inquires into the foundation of the first principles which these operations assume or imply." It will be seen that the professor has already fallen into deep water, and has begun to flounder where very many have floundered before him. In other words, he has first classed biology among the sciences, as contrasted with philosophy, and then has placed philosophy under psychology, and psychology under biology, and thus brought back philosophy to a special science, even the science of life, which means a science of the brain, and finally given it the *coup de grâce* by attacking the pure metaphysicians for doing what he had said all philosophers must do; i.e., seeking to find "the first principles which the psychological operations assume or imply."

He does not seem aware, however, that he has lost his footing, or that he flounders at all; for he seems to recover his footing by saying that "it is assuredly one of Hume's greatest merits that he clearly recognized the fact that philosophy is based upon psychology." He refers here to the title of Hume's first work as a "Treatise of Human Nature, being an Attempt to introduce the Experimental Method of Reasoning into

Moral Subjects." The title is certainly very significant; and the explanation of its import, as given by Hume himself, in the passage which Huxley quotes on p. 51, very clearly sets forth his views as to what the "experimental method" is. It shows very satisfactorily that Hume, so far as he reached definite views, anticipated the modern physical school in a then novel theory of the soul, and the method of studying its phenomena. We cannot complain or wonder that Professor Huxley at this point claims for his own views the authority of Hume. But he commits a grave offence when he proceeds to refer to Descartes and Locke and Kant as sanctioning similar opinions in regard either to the nature of the soul or the method of attaining to psychological and philosophical knowledge. In citing their authority, he not only makes a muddle of their opinions, but leaves his readers in a muddle as to the object for which he quotes them. He first observes (p. 53) that "the memorable service rendered to the cause of sound thinking by Descartes consisted in this, that he laid the foundation of modern philosophical criticism by his inquiry into the nature of certainty," and that it is a clear result of the investigation started by Descartes "that there is one thing of which no doubt can be entertained," "and that is the momentary consciousness we call a *present thought or feeling*." We beg Professor Huxley's pardon. This is not the doctrine of Descartes at all. What he insisted upon in his famous argument, *Cogito, ergo sum*, was the existence of the *ego*, as involved in and clearly discerned "in each momentary state we call a present thought or feeling." This is the truth which Hume ridiculed and denied most persistently. In proof of our assertion, we refer to the second of the Meditations, and to Mr. Huxley's own lecture upon Descartes, published in his "Lay

Sermons, Addresses, and Reviews" (p. 328, Am. ed.), in which he asserts, that in the proposition *I think*, three propositions are included. "The first of these is, 'something called *I* exists;' the second is, 'something called *thought* exists;' and the third is, 'the thought is the result of the *action* of the *I*.'" He then proceeds to argue, that, of these three propositions, in his opinion the second only can be true. From which it appears that Professor Huxley does not quote from Descartes, either in word or thought, but cites what Professor Huxley argues Descartes *ought to have said*. If any tenet was characteristic for Descartes to affirm and for Hume to deny (cf. pp. 165-6), it was the existence of the *ego* as given in every state of consciousness. For Professor Huxley to cite the authority of Descartes in favor of his own doctrine is singularly audacious.

Scarcely less daring is his citation of sundry passages from Hume as containing an anticipation of the technical theory of modern agnosticism, whereas they are simply expressive of his contemptuous disesteem of the frivolous logomachies of the metaphysical speculations current in his time. Scarcely less cool is the effrontery with which he cites Locke's sensible remarks in respect to the necessity of recognizing the limits of human knowledge, and Kant's restriction of all logical knowledge to the sphere of the phenomenal as tending in the same direction. Every way, this first chapter, on the "Object and Scope of Philosophy," is wholly disappointing. It neither gives us the views of Mr. Hume with any appreciation of his historic position, nor the views of Professor Huxley with any frankness. The citations and arguments from Descartes, Locke, and Kant are of no significance to any reader who knows any thing of their teachings. Even the just recognition of philosophy as different from science, and of the relation of philos-

ophy to psychology, is annulled by the degradation of psychology to biology, and the obvious preparation for his subsequent argument, that metaphysical relations are nothing more than cerebral outgrowths.

The second chapter treats of "The Contents of the Mind." What the precise signification of this phrase may be does not appear at once. Whether the objections urged by Huxley are valid, that the conception of the mind as an entity endowed with faculties is a legacy "of ancient philosophy more or less leavened by theology," or the doctrine quoted from Hume be correct, that "what we call the mind is nothing but a *heap or collection* of different perceptions united together by certain relations," or the cautious view finally sanctioned by the critic be the only one which it is safe to adopt, "that we know nothing more of the mind than that it is a series of perceptions," it still remains true, that the contents of the mind must signify the various kinds of phenomena which make up the heap or series.

We do not accept this doctrine, but hold to that of Descartes, that the mind is itself an agent capable of those various modes of acting and suffering which are called by Huxley its contents. But, waiving this point, we limit ourselves to Mr. Huxley's exposition and critical analysis of Hume's doctrine of the elementary phenomena of which the mind is the subject. These are correctly stated as reducible to two classes; viz., *impressions and ideas*; the first of which includes "all our sensations, passions, and emotions as they make their first appearance in the soul," and the second the faint images of impressions or antecedent ideas. Huxley criticises very justly this view of Hume, on the ground that it does not include "relations." In doing so, he might have referred to Hume's own words already quoted, as teaching a better doctrine, in which he

speaks of "different perceptions united together by certain relations." As a decisive example that Hume is wrong, he appeals to every act of memory as necessarily involving in one case "the feeling of the *succession* of two impressions," and in the other "the feeling of their *similarity*." He very justly makes a stronger point against Hume, that relations figure largely in his fundamental doctrine of association, and are altogether essential to his explanation of causation. He urges also against him, that, in his own account of the nature and origin of relations, he is inconsistent with himself. For these reasons he ventures to amend Hume's catalogue of the contents of the mind by an additional or third class of original impressions; viz., *relations*.

Having enlarged Hume's inventory of the contents of the mind by adding relations to impressions and ideas, he raises the very important question, whether the possession of one or all of these simple elements involves an act of knowledge. Of all the questions which he could possibly ask, this is fundamental to an understanding of the historical position of Hume's theory, and to a successful criticism of its fatal defect. Stated fully, the question is this: Must the mind exercise the act of knowledge in *gaining* what Huxley called its contents, i.e., its elementary states, whether these are impressions, ideas, or relations; or must it first *possess* these elements before it proceeds to unite them in an act of knowledge? This we affirm to be the most important question which could possibly be proposed for an answer.

Professor Huxley refers us at once to Locke's definition of knowledge "as the perception of the agreement or disagreement of ideas," which Hume tacitly accepts. According to this definition, he rightly reasons, the mind must have ideas, etc., before it can unite them in

relations. This would involve the inference, that the mind cannot know its simple states, as of pain, however violent, or any specific sensation, however definite, because, forsooth, it must first possess ideas before it can discern their agreement or disagreement; that is, before it can know. But surely Huxley rightly reasons, whenever we have a sensation we must know it; the distinction between the two being merely verbal. Then, is not Locke's definition defective? Huxley does not suggest the thought. He makes a joke of the matter. Instead of extricating himself from his embarrassment, he frankly confesses it, and even more frankly owns, that "the 'pure metaphysicians' make great capital out of the ambiguity" by "declaring that even the simplest act of sensation contains two terms and a relation, — the sensitive subject, the sensigenous object, and that masterful entity, the ego. From which great triad, as from a Gnostic trinity, emanates an endless procession of other logical shadows, and all the *Fata Morgana* of philosophical dreamland." With this jocose confession of weakness, our philosophical scene-shifter lets fall the curtain upon the second act of his promised exhibition; leaving the act of knowledge wholly unexplained by which "the contents of the mind" are gained.

We cannot suffer our manager to raise the curtain again and discuss the "origin of the impressions" without calling attention to the dexterity with which he omits a discussion of this cardinal question in the philosophy of Hume, and, indeed, in all philosophy. Every tyro in philosophy knows, or ought to know, that the idealism of Berkeley was logically derived from Locke's definition of knowledge as the perception of an agreement or disagreement of ideas, or from the assumption which this definition implied, that we must first gain ideas before we can discern them in relations. Berkeley took

Locke's definition to be literally correct, and reasoned from it, that we know only *the ideas* of matter and their relations, but never can know matter itself. Hume made a similar application of it to our ideas of spirit, and concluded that all that we know of spirit are our ideas of it; that we do not and cannot know the *ego* or agent, — because the "masterful ego" is only a heap or collection of impressions. Berkeley and Hume together furnished the *reductio ad absurdum* of Locke's defective definition of knowledge, and forced upon philosophers the necessity of revising and correcting it in the way indicated by Professor Huxley, by adding relations to the contents of the mind. Many of the so-called "pure metaphysicians" also go still farther, and give a corrected definition of knowledge, which the materialists and associationalists overlook or reject. This corrected definition would be as follows: The mind, "that masterful entity, the *ego*," gains its ideas by observing existing entities in relations (or as related) to one another. This is its function, and in the exercise of this function it finds the authority to trust the contents gained by its own acts. It does not find itself in possession of its materials, it knows not how, — as "the contents of the mind," as impressions or ideas, nor even as relations, — and then proceed to compound them into knowledge; but it finds things or entities in combination, or related together, and proceeds subsequently to decompose them into ideas, and to express these ideas in language. As Professor Huxley himself explains of memory, the mind not only views ideas previously present with more or less vividness, but it recalls these in a relation of succession. So it is of all experiences or mental activities: they are known to exist, and not only are known to exist, but to exist in relations to one another. *They are necessarily and uniformly given in*

combination. They are affirmed in propositions which the mind subsequently analyzes into subject, predicate, and copula. As every thing living is essentially complex ; as the vegetable and animal cell already exist, or the protoplasm is certain to show itself in distinguishable elements united into living wholes, — so the mind apprehends whatever it knows, in related elements. These, as known, become “the contents of the mind,” as united or separated by these several relations.

How widely contrasted this view of the mind and its functions is with that which Professor Huxley assumes and teaches will appear as we follow his expositions in detail. What excellent reasons he has to dismiss it with a jest may appear in the sequel. The arts of thimblerrigging are not confined to that *manual* dexterity by which the attention is diverted from a movement which the operator is desirous to conceal, perhaps from himself !

If our view of knowledge is correct, the mind in knowledge is pre-eminently active, and its position in respect to whatever it knows is a position of complete and independent self-reliance. The function itself is altogether unique, — so unique that it will suffer a comparison with no other. Whether the ego perceives or is conscious, whether it remembers or reasons, whether it invents or interprets, it appears as an individual agent, which is in no sense the servant of the objects which it discerns or explains. To interpret its acts by materialistic analogies, or to explain them by the laws which control the world of matter, is simply to destroy its capacity to judge of matter and explain its phenomena. To interpret its phenomena or products by the phenomena which address the senses, or to calculate its results by weight or measure, is to destroy the authority of the agent which weighs and measures. To assume that the

acts of scientific judgment by which biology is created are themselves only biological phenomena of a subtler complexion, is to make biology itself an uncertain product of cerebral excitements. In like manner, to degrade the science of the mind under the guise of applying to it the experimental method, by forgetting or denying that it discovers and enforces the principles and laws which are essential to all scientific method, past, present, and future ; to make this agent to be the possible product of a changing constitution, or of the progressive growths of an accidental environment, — is to be untrue to the most elementary experiences which we have of the nature of knowledge, and to the most splendid achievements of “that masterful entity” which in these modern times speaketh such great things, and often such presumptuous things, and always such brilliant things by the mouth of Professor Huxley and those who think with him.

In Chapter III. our critic proceeds to expound Hume's corrected theory of “The Origin of the Impressions.” He ought here to throw much needed light on important problems. The reader should keep in mind that the word Impressions is used as equivalent to sensations *plus* relations, both of which make up “the primary irresolvable states of consciousness.” We notice, first of all, that in this discussion the defective theory of knowledge to which we have adverted is continually assumed, and in several features which we have not yet stated. First of all, it seems to be implied, that, in the act of knowing, *the object known* is the efficient agent, and not the mind. The impression is represented as produced by “the *sensigenous* object” upon the mind, whatever that may be, whether it be the brain or “a heap,” “a collection,” or “a bundle of impressions.” Whatever it is, it is only the passive recipient of

whatever effect the object produces in or imposes upon it. Next, the relations which Huxley had noticed as not adequately recognized by Hume are grouped and treated as on a par with sensations so far as their "origin" and method of production are concerned. They also are simply the effects of objects which operate on the mind. It is marvellous in the eyes of a "pure metaphysician" to observe that Professor Huxley goes so far in the right direction in recognizing relations as essential elements in knowledge, and yet after all so readily sinks them to the level of sensations. He is not so outspoken as Herbert Spencer, who, after making as much or more of relations in the economy of knowledge than he, proceeds to define, say for example, the relation of likeness or equality between two colors or sounds as the *sensations* which are experienced in effecting a transition from the sensations of color or sound in question. Huxley does not say this, but his theory logically requires him to hold it.

In expounding Hume, the professor observes that he agrees with Descartes that "all our perceptions are dependent on our organs, and the disposition of our nerves and animal spirits." He also shows, and correctly enough, that Hume taught that the primary qualities and the two classes of secondary qualities are alike, in being impressions produced on the senses. Whereupon Mr. Huxley leaps to the conclusion, that Mr. Hume "fully adopted the conclusion to which all that we know of psychological physiology tends, that the origin of the elements of consciousness is to be sought in bodily changes, the seat of which can only be placed in the brain." He quotes again from Hume to the effect that there can be no possible objection from the nature of matter or mind, as known *à priori*, "against the possibility of a causal connection between the modes of

motion of the cerebral substance and states of consciousness." The substance of Hume's argument is, that, inasmuch as causation is resolvable into accidental associations, any thing can be the cause of any thing else if only it is constantly conjoined with it. Whereupon Huxley waxes bolder in the affirmation, that what Hume had provided for as possible has now been established as certain, — that "what we call the operations of the mind are functions of the brain, and the materials of consciousness are products of cerebral activity." He then adds, "It is hardly necessary to point out, that the doctrine first laid down is what is commonly called materialism. In fact, I am not sure that the adjective 'crass,' which appears to have a special charm for rhetorical sciolists, would not be applied to it. But it is nevertheless true, that the doctrine contains nothing inconsistent with the purest idealism." The readers of Mr. Huxley will not be surprised at this statement, or the argument on which it is founded. It is no strange thing to find him urging with the utmost confidence the doctrine that the brain is all the mind which science can recognize, and the phenomena of spirit are altogether dependent on modes of motion, and then turn about and add, but, after all, it is of no consequence what we say; for modes of motion on the one side, and the corresponding spiritual states on the other, are simply two uniformly adherent phenomena of we know not and care not what substratum, call it what you will. In a similar fashion reason Spencer, Bain, and Lewes. We submit, however, that it is not altogether fair to make Hume teach doctrines like these, and anticipate the modern dogmatic, two-faced materialism. The ambitious and deferential references of Huxley to the "pure metaphysicians" Leibnitz and Fichte, in this connection, do not relieve him of the charge of

reading the philosophy of Huxley between the lines of Hume. It is true, Hume the sceptic did suggest, that every thing which we call the substance of matter and spirit is utterly beyond our apprehension, and that all we do know of either is simply sensations; that both matter and spirit themselves are nothing more than collections of sensations and emotions. But Hume the dogmatist, when he suggested, that, for aught we know, the several changes in the animal spirits or the nervous system are adequate to account for every description of mental phenomena, treated matter as the substance well known and real to the solid common sense of common man, and as the producing agent of all spiritual manifestations, and therefore the only permanently existing agent in the universe. Mr. Hume, the acute reasoner against the possibility of any philosophy, is one man, and Mr. Hume, the assailant of those spiritual truths which are vital to all morality, faith, and worship, is altogether another.

Mr. Huxley himself is also an example of a man who can play two rôles in reasoning, and scarcely know when he passes from the one to the other. When Mr. Huxley reasons as a physiologist or paleontologist, there is no man so positive an assertor of the reality of matter, and its infinite capacities for evolution into forms of wonder and beauty. But Mr. Huxley the metaphysician is the most uncertain and timid of men as to whether matter or spirit have any existence, and does not care what name you give to either or its phenomena. When he comes before an American audience, with his enthusiasm freshly excited by the remains which had been freshly observed in an American museum, he stamps forth with his feet his irrefragable and enthusiastic conviction that evolution is a demonstrated fact; but when he enacts the rôle of a

"physiological metaphysician," then matter and spirit, the old horses and new, with their infinite number of intervening forms, are all, in the generosity of his idealistic candor, at once converted into sensations; and sensations and emotions are declared to be all that we know of either matter or mind. Forsooth, the successions and associations of these sensations and emotions constitute the facts and science of either and of both. On the one hand, he asseverates that physiological psychology has taught with absolute positiveness that all the varieties of so-called spiritual activity are produced by modes of motion in the cerebral substance. But, again putting on his metaphysical robes, he declares that modes of motion, bulk, and figure are nothing but sensations, and consequently materialism and idealism are interchangeable; and it is folly to ask which you will prefer, for at bottom they are one.

Growing so liberal in his catholicity, he condescends, in this very chapter, to accept the long-discarded doctrine of innate ideas, and invites Descartes, the former high priest of spiritualism, to enter into the temple of the new philosophic faith, and officiate with distinguished honors. These innate ideas, he informs us, are nothing more nor less than "the product of the re-action of the organ of the mind on the stimulus of an unknown cause, which is Descartes' *je ne sais quoi*." This assertion might be admitted to be true if the phrases *organ of the mind* and *je ne sais quoi* were omitted. But against these omissions Descartes would have protested with his utmost energy; and his school would have exclaimed with philosophic horror, *Procul, O procul!*

We ought not to be surprised, that, with this liberal construction of Descartes' doctrine of innate ideas, he should administer a reproof to Locke for grossly misun-

derstanding him, nor, perhaps, that he should extend to Kant a patronizing expression of gratification that he had the penetration to anticipate the doctrine propounded by Mr. Huxley, that "co-existence and succession are mental phenomena not given in the sense-experience." We are all of us greatly obliged to Mr. Huxley for the small favors bestowed in the recognition of these relations as superadded to pure sense-experiences, but we confess that we cannot clearly discern in what way they are the products of "modes of motion" in the cerebral apparatus. We apprehend, that however cordial may have been the invitation to Kant and Descartes to enter the temple of Mr. Huxley's faith, on condition that they would assert that the relations which are superadded to sense-experiences are themselves brain-growths, they would be rather slow to accept it.

In Chapter IV. the author proceeds to give his views of the higher operations of the mind, under the title, "The Classification and the Nomenclature of Mental Operations." He re-asserts at the beginning, more roundly than ever, the doctrine that all mental states are effects of physical causes; that they occur in assignable portions of the cerebral substance, both the impressions and relations when originally received, as also all the subsequent modifications to which they may be subjected. Every intellectual activity falls into one of the three groups of sensation, correlation, and ideation. Ideation signifies the recall of sensations, either in the relations originally experienced, or as more or less modified. In one point only Huxley differs from Hume. Whereas Hume makes memory and imagination to differ from sensation chiefly in that their phenomena are less vivacious, Huxley insists, that in memory the objects remembered must have co-existed

with other ideas in the past, and preceded impressions or ideas now present. This is what he means by correlation, emphasizing co-existence and succession, on which Hume had placed but little stress. It is to be remembered, however, that the relations themselves are conceived by Huxley, especially with sensations, as "feelings produced by cerebral changes." He emphasizes also expectation as equally important with memory. But the element of knowledge as related to reality, whether in the past or the future, is left wholly unexplained. Recognition, or the certainty that the event revived actually occurred, is resolved wholly into the phenomena that one idea is recalled in connection with another. Knowledge or belief of the future is explained as a so-called present state of consciousness, having no relation to the "sensigenous object" or "the masterful ego." Knowledge in the form of memory is the recall of two or more ideas in the relation of succession to one another and some present impression, while expectation is equally destitute of the element of any belief in the future conception as real.

Generic ideas, also, which play so important a rôle in scientific processes, are the result of the frequent revival of a few elements in individual impressions, to the neglect of the great number which only occur occasionally; the element in the process of forming and using such ideas, which is of any significance to knowledge, being wholly left out. The conjunction of two or more generic ideas, "as heat and flame, weight and solidity," in the so-called relations of causation, is explained by both Hume and Huxley by association and custom. If generic memories of succession are strengthened by repeating similar combinations in new impressions, the process is called *verification*, every case of which strengthens belief by simply giving greater energy to

association. This is all that either Hume or Huxley has to say of the higher intellectual processes, so far as these can be performed without the aid of language. Knowledge is but the occurrence of successive or similar states of consciousness, which, whether they represent realities of matter or spirit, are not known to be either and are not known to be any thing, even what they are interpreted to be, and are the attendants of the modes of motion in the sensigenous object, in connection with changes in the cerebral functions. The relations of succession, co-existence, and similarity are also products of modes of motion and cerebral correlates. Memory is but the recall of conjunctions of ideas and impressions. Classification is the result of association. Propositions of causation, with their explanations of the past and their predictions of the future, are founded on custom, which signifies the more or less frequent association of impressions or ideas. Last of all, the experiment which verifies every theory does this only by making stronger the bonds which association had already established.

This is the theory of the higher operations of the mind which Mr. Huxley, in the name of Mr. Hume, commends to the men of the present generation as the net result on the one hand of the new philosophy, which is the outcome of physiological psychology, and which he would have us believe is not only enforced by Hume, but in a sense sanctioned by Locke, Descartes, and Kant, and on the other hand as sufficient to explain and justify the supreme confidence which present and future science exacts from all its votaries, however bold are its assertions concerning the history of the past, or confident its theories concerning phenomena which cannot possibly be verified. Science nowadays erects a tower that rises beyond the clouds, and threatens to

overtop the very battlements of the heavens beyond which faith had imagined it now and then could catch some glimpses. It would seem, that, in order to support so lofty a structure, it should require a foundation broader and deeper than Mr. Huxley's metaphysical analysis of the higher intellectual processes.

We ought not to be surprised to find, after Mr. Huxley has lowered the highest operations of the human intellect to cerebral motions and associational combinations, that he should be prepared to find no difference between the mental phenomena of animals and the mental phenomena of men. This doctrine he proceeds to establish in detail in Chapter V., which is devoted to the discussion of this point. He begins by adverting to the truth, that, as the use of language is proved by the example of children and deaf-mutes not to be essential to these higher processes, it follows that the absence of language on the part of animals does not of necessity involve the entire absence of these higher activities. He urges still further, that, "whatever reason we have for believing that the changes which take place in the normal cerebral substance of man give rise to states of consciousness, the same reason exists in the belief that the modes of motion of the cerebral substance of an ape or of a dog produce like effects." Moreover, the actions of an ape and a dog give evidence similar to that which is furnished by man, that both are capable of every variety of intellectual activity which is achieved by him. Dogs remember and dream and generalize and reason. Comparative psychology, now re-enforced by comparative physiology, sanctions this conclusion; and Huxley notices, that although Hume in some sense anticipated the existence of this science, with its incidental testimony to the likeness of intellectual processes in both animals and men, he yet hesi-

tates to find any similarity between the "inference of the animal" and "the process of argument or reasoning in man." On second thought, however, he finds him to hold, that even the "experimental reasoning" in man, "on which the whole conduct of life depends," is "nothing but a species of instinct or mechanical power that acts in us unknown to ourselves." From this Huxley gives his own theory, which is simply what we should expect to find; viz., that instinct covers every mental process,—from the reflex acts of the nervous system up to the most deliberately reasoned process of scientific deduction. But this view of the matter, Huxley proceeds to observe, involves in some sense the doctrine of innate ideas as held by Descartes; and he for the second or third time extends to him the right hand of fellowship. But he fails to note that the innate ideas of Mr. Huxley are simply the more highly developed capacities of a well-trained and well-descended brain; while the innate ideas of Descartes are in no sense whatever dependent on the brain or the animal spirits, but would be excluded from holding any relations whatever to matter.

Language remains to be disposed of as something peculiar to man. It is noticeable that Mr. Huxley is in haste to despatch it in a very speedy and summary fashion. He certainly throws no light whatever upon its nature, and evidently feels no little embarrassment in explaining how, by means of its potent alchemy, thought becomes visible and science is made possible. All the explanation which he gives of it is summed up in the commonplaces: Substantives are signs of mental wholes,—attributes, of the parts of which these wholes are composed. Predication is a sign of "the feeling of a relation," which carries us back to the resolution of an experienced or felt relation into an impression, and

smuggles in the knowing or a predicated agent, who has been resolved into "a heap or collection of impressions and ideas," through the phrase "feeling of a relation," in which an agent who can feel is implied but not confessed.

From language Huxley proceeds to the verbal propositions in which "men enshrine their beliefs." Of these beliefs he considers Hume's Philosophical Theory of Necessary Truths, The Order of Nature, The Soul, Theism, The Passions and Volitions, and The Principle of Morals. We do not propose to follow Mr. Huxley in his remarks upon Mr. Hume's opinions upon these topics. But we cannot refrain from noticing a few of them. He finds, to his discomfiture it would seem, that Mr. Hume recognizes a clear distinction between relations of ideas and matters of fact, and that under the first he comprehends mathematical relations and all the so-called intuitive and even all demonstrated truths. Mr. Huxley's "ineradicable tendency to make things clear" finds it hard to reconcile this statement with either his own or Hume's theory of impressions or relations, or the doctrine of instincts or custom. Had he chosen to avail himself of Hume's doctrine of the origin and nature of mathematical knowledge as expounded in the "Treatise of Human Nature," he would have found one more harmonious with the drift of his psychology and metaphysics. It is a doctrine which would set most modern mathematicians aghast; and we do not wonder that Professor Huxley does not refer to it, but rather gives himself to the work of explaining away the distinction which Hume had recognized as existing between intuitive relations and matters of fact! He urges, that, had not "matters of fact" been given to us through the senses, we should never "in fact" have apprehended mathematical entities or the relations

which they involve. It follows that geometrical and numerical *quanta* are in some sense matters of fact! Moreover the axiom, "Things which are equal to the same are equal to another, is only a particular case of the predication of similarity; and, if there come no impressions, it is obvious there could be no predicates," and breaks out with the *naïve* interrogation, "But what is an existence in the universe but an impression?" Indeed, thou solid, matter-of-fact, critical, defiant Mr. Huxley! Has it come to this, that, misled by a narrow psychology and insnared by shallow metaphysics, thou hast been brought so far as to confess that this solid universe of matter, with its wondrous protoplasm containing within itself such wonder-working power and potency, and gathered in vast reservoirs in the abysmal depths, and baptized with a name befitting its mysterious hiding-place, — that all these are nothing but *impressions*?

But we return from our digression, as Huxley returns to his logic after this exclamation, to say if what are called necessary truths are analyzed they will be found to be of two kinds: "Either they depend on the convention which underlies the possibility of intelligible speech, that terms shall have the same meaning, or they are propositions, the negation of which implies the dissolution of some association in memory or expectation, which is, in fact, indissoluble, or the denial of some fact of immediate consciousness." The resolution of the so-called logical laws into a convention or device to effect the possibility of communication between man and man reminds one of the exclamation of Sancho Panza, "Blessed is the man who *invented* sleep!" inasmuch as it attributes the recognition and use of conceptions as identical with one another to an arrangement or contract suggested by the desirableness of language.

Our necessary beliefs of matters of fact are resolved into propositions, which cannot be denied without breaking some association of memory or expectation, "or the denial of some immediate fact of consciousness." We stop at this last phrase with delighted surprise at discovering that Mr. Huxley has allowed himself for once to recognize man as a being who can know something, even though what he knows is only a fleeting impression. Hitherto, in common with Hume, he had made the elements of all mental activity to be impressions produced by the "sensigenous object," and existing only as fleeting phenomena, and out of which, by means of custom and association, all else was built up. But here at last he confesses that man can know a fact, viz., a fact of consciousness; that is, that knowledge or belief is exercised by the mind as an "immediate fact of consciousness," and the reality known may not be denied.

When Mr. Huxley, in still further confirmation of his meaning, explains that "the denial of the necessary truth, that the thought now in mind exists, involves the denial of consciousness," he asserts what we think a most obvious and elementary truth, — a truth which is fundamental to our confidence in either knowledge or philosophy. But, in asserting this truth, he abandons the very corner-stone of Hume's teaching, that impressions are the elements of our intellectual states.

In order still further to weaken our confidence in necessary truth as contrasted with matters of fact, he observes that what we call matters of fact almost universally include their relations; as when we say red is unlike blue we have a fact or relation of similarity, or when we recall a fact of memory we assert for it a relation of time. This is all true enough; but it does not meet the case, inasmuch as the so-called necessary relations which are also self-evident are not of this sort at all.

Mr. Huxley does not care to prosecute the subject of necessary truths as against the concessions of Hume any further than to assert that it is impossible to prove that the cogency of mathematical first principles is due to any thing more than early-formed, constantly repeated, and perpetually verified associations. And here he leaves the matter. It would seem to be especially unfortunate for his cause, that Professor Huxley has treated so superficially, and in a sense disposed so flip-pantly, of mathematical *quanta* and their relations. The majority of modern scientists are disposed to trust in mathematics, whatever else they may distrust. Few if any of them, unless they have been previously committed to the consequences of the metaphysical theory of physiological evolution, will accept that view which brings these relations down to a level with matters of fact, or resolves them into the unbroken associations which come from often-repeated experiences. The pure mathematics are a strong outwork of sound philosophy, which the believers of solid science and solid metaphysics and solid faith are under a common necessity to defend; because here is a central rallying-point for each and all, whether they make an onset or a defence. The axioms and constructions of pure geometry are a standing protest against modern cerebralism.

Professor Huxley deals almost as lightly (and more inconsequently and inconsistently) with the causal relation as he does with the mathematical, at one time criticising Hume, and then sanctioning the very error which he had criticised. In one breath he calls attention to the point, that it is one thing to be indebted to experience for the belief that a particular cause is invariably connected with an effect, and altogether another to derive from it the belief which every scientist must accept, that every event is caused. And yet on

the very next page he argues at considerable length to show that multitudes of men believe that the majority of events are wholly uncaused. The only possible reconciliation of this apparent inconsistency would be found in the theory which Stuart Mill holds, that the belief in the universality of the relation is as truly the result of experience as the belief of a single exemplification of it. This is doubtless Professor Huxley's own theory, but he passes the whole of this fundamental matter over too lightly to invite criticism. Inasmuch as he does not attempt to give his own metaphysics of causation and the uniformity of nature, we must be excused from noticing the scanty views which he seems to favor. We observe, however, that he does not undertake to reconcile Hume's theory of mathematical or causal relations with either Descartes' doctrine of innate ideas or Kant's doctrine of the *à priori* forms of the sensory or categories of the understanding. That would be an effort beyond the audacity of even Huxley's ingenious effrontery.

As Professor Huxley proceeds to Hume's doctrine of miracles, he grows still more shy and reserved, finding himself in deeper water than that to which he is accustomed. He shows himself incompetent to measure the philosophical strength of Hume's argument for the *à priori* improbability of any violation of the laws of nature whatever, as also to estimate the preponderating force of the counter-argument in support of the *à priori* probability of miraculous intervention whenever the necessities or ends of the spiritual universe demand or justify such an intervention. A belief in the uniformity of the laws of nature, which is founded solely on the generalizations of experience, is too weak, as Mr. Stuart Mill confesses, to establish any conclusion which may not be overturned by a single example to the contrary.

Professor Huxley, however, says, "The day-fly has better grounds for calling a thunder-storm supernatural than has man, with his experience of an infinitesimal fraction of duration, to say that the most astonishing event that can be imagined is beyond the scope of natural causes." But why not say, in reply, that man, from his limited experience, is equally incompetent *to deny* that such an event is beyond the scope of *supernatural* causes? Upon Professor Huxley's or Mr. Hume's explanation of the grounds of our belief in the natural and its uniformities, we cannot see why what has been considered to be uniformly natural should not be regarded as exceptional. To the suggestion, that what seems to be exceptional may be referred to some law as yet undiscovered, we reply, that the faith in uniformity or law even, if it be held to be derived from experience only and to be the product of association, may be overturned or weakened by such experience or association, so far as any *à priori* probability is concerned. In other words, it is only on *à priori* grounds derived from the relations of purpose in nature that experience learns, in ordinary cases, to pronounce a miracle impossible and incredible. The fact that men do thus judge, in ordinary circumstances, of reported miracles, gave to Hume's argument its plausibility, or rather its strength, as against credulity and fanaticism. It is true, that, on the grounds furnished by his own metaphysics or philosophy, Hume had no right to appeal to experience at all as he did, as furnishing the grounds for faith in the uniformity of nature. But Hume the keen-sighted man of the world and the sensitive satirist of superstitious credulity was another person than Hume the logical metaphysician. Therefore, when he turned to the Christian miracles, he had so little appreciation of their import and the occasion for their occurrence that

it was impossible he should find any difference between them and those which offended his common sense ; and so, as a man of the world, he rejected them, but persuaded himself that it was on grounds of a profound philosophy, — a philosophy certainly more profound than his own metaphysics ever provided. But Professor Huxley has no insight for this construction of Hume's argument ; and he alternately flounders in his own incapacity to dispose of the problem with any satisfaction to himself or others, and sneers in his own contemptuous ignorance at truths and reasons for which he has no insight.

He fares even worse when he proceeds in the next chapter to the discussion of "Theism and the Evolution of Theology." He remarks at the outset very truly, that "Hume seems to have had but two hearty dislikes, — the one to the English nation, and the other to all the professors of dogmatic theology." He did not add, which he might have done very truly, that, if *contempt* were substituted for *dislike*, he himself sympathizes most cordially with Hume. This contempt is manifest in the want of interest which he manifests in the exposition and criticism of Hume's discussion of theism. In Hume's treatises, particularly in his dialogues concerning Natural Religion, there is more acuteness, comprehensiveness, and earnestness than in any or all of his other philosophical writings. Despite the sceptical uncertainty into which he very frequently falls, he now and then seems to forget the pyrrhonist, and to reason as a man, with a subtlety, force, and eloquence which are most honorable to what we may suppose to have been his prevailing convictions. The words which he puts into the mouth of Cleanthes, the advocate for the argument from design, are often earnest and glowing. Professor Huxley has no sympathy with

arguments in this direction; as, indeed, his thorough-paced associational metaphysics would allow no standing-place for a moment for design in nature: and he slides over the discussion as easily as possible, interposing here and there a sharp remark to give energy to every negative conclusion, and to weaken the force of any positive utterances. At the end of his comments on both Hume and Bishop Butler, he gives us the following: "Surely on this topic silence is golden, while speech reaches not even the dignity of sounding brass or tinkling cymbal, and is but the weary clatter of endless logomachy. One can but suspect that Hume also had reached this conclusion, and that his shadowy and inconsistent theism was the expression of his desire to rest in a state of mind which distinctly excluded negation, while it included as little as possible of affirmation respecting a problem which he felt to be hopelessly insoluble."

After having thus brought the authority of Hume, as far as possible, over to the side of the modern agnostics, he proceeds to quote from the "Essay on the Natural History of Religions," as a tentative effort in the direction of the modern doctrine, that monotheism is the product of evolution. His scientific interest in this matter, however, is easily turned aside by the opportunity to satirize the free application to one another, by religionists of all classes, of the term atheist as a term of reproach. Characteristically enough, having begun this chapter with the saying, that "if Hume was ever bitter in his public utterances, it is against priests in general and theological enthusiasts and fanatics in particular," he concludes it with quoting a stanza or two of bitter and biting lines from Burns's "Holy Fair" against the professors of Scottish religion and theology.

The three remaining chapters are entitled "The

Soul," "The Doctrine of Immortality, Volition, Liberty, and Necessity," and "The Principles of Morals." They contain no matter worthy any special attention, and the author shows in writing them that he had become weary of his task. He attempts to dispose of Descartes' doctrine of the immateriality of the soul by discoursing of the absurdity of his other doctrine, that a being whose essence is spiritual can hold no relations to matter. He quotes with approbation Hume's dogmatic assertions, that, as for *himself*, he never found that he could find in *himself* any thing which he could call *himself*, but only "a *bundle* or collection of different perceptions," or "a *kind of theatre* where several perceptions successively make their appearance." He next subjoins several well-known puzzles from Hume and himself to illustrate the loose and variable application of identity to material objects. He thinks it quite enough to find, that, in respect to the evidences of the natural and necessary immortality of the human soul, Archbishop Whately agrees with Hume, to whom he thinks the prelate was indebted for his own views. As to the moral argument, he sneers at the attempt to know any thing about the divine justice, and the necessity of another life for the vindication and completion of its work, and brings in Kant to indorse the position of Hume, that the immortality of the soul cannot be demonstrated by the intellect; dismissing Kant's moral demonstration with a flippant word. The chapter on volition, etc., furnishes an opportunity for him to utter the dogma, that "so far, therefore, from necessity destroying moral responsibility, it is the foundation of all praise and blame; and moral admiration reaches its climax in the ascription of necessary goodness to the Deity." He then endeavors to meet the objection brought against necessity, that it makes God the author

of sin, by observing that Hume attempts no answer to it, "probably because none is possible," but subjoins in the next breath, that the objection is "the direct consequence of every known form of monotheism," and adverts to the fact, "that not long after the publication of Hume's treatise, Jonathan Edwards, president of the College of New Jersey, produced, in the interests of the strictest orthodoxy, a demonstration of the necessarian thesis, which has never been equalled in power, and certainly has never been refuted." Here, again, he must bring in Kant, with his intelligible freedom as pertaining to the human soul as a *noumenon*, for the purpose of a witticism about metaphysicians, which we may be pardoned for saying is as applicable to the "physiological" as to the "pure metaphysicians."

He concludes with a few pages upon Hume's Principles of Morals, in which this same Professor Huxley, whose psychology is materialism, whose metaphysics is evolutionism, and whose theology is atheism, avows himself a *sentimentalist* in ethics, declaring in so many words, that, "in whichever way we look at the matter, morality is based on feeling, not on reason;" and "the moral law, like the laws of physical nature, rests upon instinctive intuitions, and is neither more nor less innate and necessary than they are." Some men are destitute of a mathematical sense, others of any sensibility to art; and "some there may be who, devoid of sympathy, are incapable of a sense of duty."

In closing this critical examination of Professor Huxley's exposition of Hume, the writer finds himself inclined, if not constrained, to apologize for the detail and the length of a paper which, as would appear, has been occupied with material which has proved so weak and unworthy. His apology is furnished in the importance of the theme, and the reputation and ability of

the critic. The philosophy of Hume is rightly judged by Professor Huxley to have very great significance at the present time, by reason of its intimate relations to the metaphysics of that very influential school with which Professor Huxley is very closely identified. It also has a very definite genesis, having been evolved very directly and by stages which can be traced most distinctly from Descartes and Locke. It has awakened severe and constant criticism notably from the Scottish and German schools, and been challenged in every one of its assertions and assumptions by a long succession of acute antagonists. Of all this Professor Huxley knows something, enough at least to impress him with the importance of his theme, and to prompt him to acquaint himself with the opinions and writings of Kant, — how thoroughly and appreciatively may be gathered from the course of the present criticism. It would seem that his knowledge of the place which Hume continues to hold in modern thinking should have prompted him at least to treat his theme with greater thoroughness, and to acquaint himself more completely with Hume's critics and antagonists. It happens, that, not very many years before Professor Huxley's work was undertaken, a new edition of the works of Hume, accompanied by a very able and searching critical examination of the principles of his philosophy, was edited at the University of Oxford. Of the existence of this able criticism Professor Huxley makes no recognition. He does not often condescend to notice or refer to this edition of his works; although he makes some little parade of his bibliographical recognition of and reference to the only other complete English edition, which was published in 1810.

It is doubtless true, that Professor Huxley is so well satisfied that the physiological metaphysics with the

materialistic psychology and atheistic theology are so far established beyond all refutation as to release every one of their adherents from the obligation to fight any battle in their defence. As long, however, as the opposite party makes a respectable showing, and retains a manifest hold upon the faith of men who are disposed to defend their opinions, it would seem to be no more than courteous for those who are so confident of their strength to exercise it after the methods generally recognized in legitimate warfare, especially when the challenge comes from their own side.

Professor Huxley, in undertaking to state and define the philosophy of Hume, especially in relation to modern theories, might be held to the duty of doing his work with the candor and thoroughness which would command the respect of his opponents, by exhibiting an adequate knowledge of his subject-matter, and by opposing to their well-known arguments some earnest counter-discussion. In failing to do this, he has produced a work which rises no higher than a clever *jeu d'esprit*, but can have no influence except with that one-sided set of writers who, having fired away all the shot which they have at command in the defence of atheistic evolutionism, employ themselves in discharging rockets over their imagined success. In the mean time, no one is deceived but themselves, and those lookers-on who mistake brilliant coruscations and repeated shoutings for effective arguments.

On the other hand, it makes a sober man sad to observe that these are indications of a decay of the truly scientific spirit among a certain class of educated men, which threatens a greater evil, if such were possible, than a temporary weakening or destruction of ethical and religious faith. We appreciate and enjoy Professor Huxley's acuteness and wit, without a thought of

whom or what he strikes; but we cannot enjoy his superficial ignorance or shallow appreciation of considerations to which men of the highest rank in the world of thought have attached supreme importance. We regret that he should have lent his example to a tendency which is rapidly gathering strength,—to the division of men of scientific spirit into two separate encampments, which, instead of engaging in brave and vigorous controversy, shall retire beyond even fighting distance, under intrenchments which are only strong enough to serve the needs of those who dare not measure their strength in the open field. Whether the indignant fulminations of unscientific and ignorant religionists, or the contemptuous asseverations of unphilosophical and one-sided scientists, do the greater harm, is of little use to inquire. Mr. Hume did, if possible, infinitely greater harm to the world by the uncandid and frivolous spirit which grew out of his utter distrust of the possibility of scientific certainty than by his attacks upon natural theism and supernatural Christianity. Professor Huxley is likely to do infinitely greater harm by the example of unscientific and superficial philosophizing which this biography furnishes than by the direct aid and comfort which he has furnished by his sneers and his dogmatism to scientific unbelief.

XI.

THE NEWEST ATHEISM: ITS ENFANT TERRIBLE.¹

It not unfrequently happens, that, in a large family of active-minded children, there is one who is conspicuous for energy of thought, and a certain habit of direct and outspoken utterance, conjoined with a *naïve* unconsciousness and simplicity, which make him at once the terror and the delight of the household. He speaks out the family secrets with a charming and yet fearful openness of manner and bluntness of phraseology. He repeats with a perilous truthfulness the free remarks about the neighbors which are proper only to the family circle, and then only when young ears and prattling tongues are supposed to be absent. He applies to the conduct of casual visitors the axiomatic principles of a wise father or prudent mother with a fearful directness if not precipitancy of logic, with such utter heedlessness of place and time and age and sex as confounds the oracle from which the wisdom originally proceeded, and makes it resolve with inward groanings ever afterwards to be dumb.

Such a child may be gifted, even to an almost preternatural degree. He may be fearfully clever. He may be acute and logical, plain-spoken and witty, ardent and fearless, noble and brilliant; but for all that, rather be-

¹ Lectures and Essays by the late William Kingdon Clifford, F.R.S., etc. Edited by Leslie Stephen and Frederick Pollock, with an introduction by F. Pollock. In two volumes. London: Macmillan & Co., 1879. Princeton Review, May, 1880.

cause of these very preternatural gifts and this preternatural boldness, he is the *enfant terrible* of the household and the neighborhood.

The very select family of those who call themselves the Scientists of the present generation are of necessity very active and bright-minded. The members of this large household are constantly stimulating one another by their brilliant hypotheses, and their daring adventures in the field of experiment and conjecture. They wax earnest in their manifold discussions, whether they agree or disagree. They are often — we had almost said always — subtle and acute, eloquent and bold in their expositions of favorite theories, or their lofty flights of imaginative romancing. Scientific papers and debates and harangues are usually especially spirited and spirit-stirring. It is not surprising, that in certain branches of this now very numerous and variously assorted family, especially those branches which delight to think of themselves as advancing to the very front rank of speculative daring, there should be more than one *enfant terrible* who distinguishes himself by exploits of speculation and daringness of utterance which astonish even the boldest of his compeers. Such a thinker and expounder was the late Professor William K. Clifford, whose somewhat extraordinary career and more extraordinary utterances are for many reasons worthy of careful consideration. Among these reasons the most important is, not that he indulged in occasional paradoxes of thought and speech, but that his atheistic logic possessed him like an evil demon, shooting him along arrowy rapids, and plunging him down abysses of denial, into which most men shudder even to look. This daring and perilous logic was not so much the logic of the man as it was the logic of his school. It was no narrow and personal idiosyncrasy, the result of

temperament and training. It was the consistent and outspoken reasoning of the atheistic materialism of the times which so many now call philosophy, and of those specialized doctrines of nature and of man which are claimed to be alone worthy to be called scientific. Were the principles announced in these lectures peculiar to Professor Clifford, they might be regarded as the products of an unusually intense and therefore a narrow personality. But they are *the axioms* of a large and ambitious and positive school of thinkers, who differ from him only in that they cannot state them so forcibly, or dare not state them so boldly, as he has done. Were the reasoning an individual peculiarity of a singularly subtle and therefore an over-refined logician, it might be dismissed as the product of an intellect misled by the tenuity of its own deductions; but when it is discovered to be in no respect peculiar, except as it is disencumbered of many superfluous and entangling lines of ratiocination, it is well fitted, not only to attract our attention, but to awaken the inquiry, If this logic is so merciless, how can any thinker escape being impaled upon its polished but cruel spikes? Were the conclusions only the daring and isolated bravados of a bold and paradoxical declaimer, or the extravagant flights of a fervid romancer, they might receive our astonishment, or our admiration, or our ridicule; but when they are viewed as the necessary consequents of a well-reasoned and coherent system held in common with the writer by hundreds or thousands of sober thinkers, who differs from them only in vigor and clearness and eloquence and daring, they are fitted, not only to arrest the attention, but to hold it with earnest and steady gaze until the question is asked and answered, Are the premises sound from which these conclusions are deduced, or do the conclusions, so offen-

sive and shocking as they are, prove of themselves that the premises must be false or only partially true?

The career of Professor Clifford was singularly brilliant and singularly short. He was born May 4, 1845, and died March 3, 1879. He was very early distinguished for extraordinary aptitude for the pure mathematics; being alike remarkable for subtlety of analysis, fertility of invention, and felicity of exposition, amounting to genius in the highest and rarest sense of this term. At the age of twenty-six he was appointed professor of Applied Mathematics in University College, London. Before this time he had plunged with passionate zeal into the discussions of modern speculation. As early as at the age of twenty-three he had accepted the doctrine of evolution in its extremest form and in its most daring applications. The then new and paradoxical positions in respect to space and the nature of mathematical quantity were hailed by him with glowing enthusiasm, and propounded with an ardor and ingenuity peculiar to himself.

Psychology, scientific induction, ethics, and theology were handled one by one with the same confidence; and the extremest conclusions in each were advanced with what seemed, to many, a defiant recklessness which savored little of the philosophic calm. At his death, which was premature but not unexpected, thinking men, who believe in God and immortality, held their breath, and kept their thoughts to themselves.

A brief and most unsatisfactory memoir of his collected essays and lectures, many of which had already been published, are all the materials by which we can judge of the man or estimate his philosophy. For the reasons already given, both deserve a considerate attention.

As we have already said, Professor Clifford was an

extreme evolutionist; accepting the theory first under Mr. Darwin's impulse as a new creative principle in biology, then proceeding to use it in constructing psychology, and subsequently extending it, under Spencer's guidance, as a universal philosophy to explain every description of natural phenomena with their laws, i.e., mechanism, chemism, life, spirit, man, — in short, the universe, — from which he formally and passionately excluded God, not only finding no place for the Self-Existent, but demonstrating that philosophy not only does not recognize an unknowable God, but that it *knows* there is no God higher than humanity or man. At first he was a High Churchman, and as such had carefully separated his traditionary faith from those intellectual processes which his scientific theories were constantly bringing into requisition. For a while he held, as a positive tenet, that religious truth could not rest on scientific proof, inasmuch as the latter requires probable evidence alone, while religion demands intuitive certainty. For a while he arrested his sliding steps on the slippery slope down which they were gliding, by finding in faith a positive insight, or a special religious faculty; but this he abandoned — when or how we are not told, but it is easy to see why — so soon as he had fairly accepted the dogma, that every species of intuition is a growth of time in the cerebral structure. That at first he was extreme, not to say extravagant, in the applications of his theory to practical matters, and was in danger of exemplifying his new creed by applying the doctrine of growth by differentiation in some personal extravagances of *sans-culotterie* in manners, if not in morals, is hinted by his biographer. This effervescence, as we are told, was soon over. This youthful tendency to differentiation seems to have very soon yielded to the sobering or integrating influences of his environment.

Under the sounder sense of his associates, he was content to expend his enthusiasm in the propagation and application of his new theory in speculative applications, which were sufficiently startling and paradoxical. Leaving the man for the present, to return to him again, we will notice some of his philosophical theories as expounded by himself.

We begin with his theory of the intellect. This is explained most fully in his discourse "On Some of the Conditions of Intellectual Development." This discourse was prepared at the age of twenty-three, not long after he had given his complete adhesion to the doctrine of evolution in its wider and more thorough-going import. It flashes with the enthusiasm of youth newly kindled by a fresh discovery of wondrous promise. It reveals most distinctly and frankly the logic by which these new convictions had been reached. The professor begins by reminding his hearers that their minds are constantly changing. New sensations, new impulses, succeed one another in rapid succession. The character also, which at first thought might be said to be fixed, is itself constantly undergoing a slow but certain movement. This is true, even of that aggregate of changes in the character of generations of men which we call *the spirit of the age*. These changes, moreover, have a fixed relation to circumstances. All the influences which are used by a man with himself, his neighbors, and his generation, proceed on the assumption, that, if circumstances change, the character will change with them. This raises the question, When are these changes for the better, and when for the worse? How shall we answer this and other questions? The author suggests a method, founded, as he frankly owns, on "a certain analogy; namely, the analogy between the mind and the visible forms of organic life"! The

plant *grows*, the animal *grows*, the mind *grows*. What is this feature called growth which is common to them all? Simply this, that in the changes which all men experience, the old and the past is not left behind, but is taken up into the new and incorporated with it. If, in this particular, growth is common to the organic and the spiritual, "may we not reasonably suppose that the laws of change are alike, if not identical, in the two cases?" This analogy, if analogy it may be called, is the only reason given by this brilliant professor for accepting the hypothesis of evolution and including within it the sphere of life and the sphere of intellect. It is true he only accepts it as "a working hypothesis:" but he accepts it with all the accessories which Mr. Darwin had attached to it; viz., the tendency to vary and the struggle for existence, neither of which features necessarily belongs to the single common characteristic of growth. The first leap would seem to be a long leap, — from growth in a tree to growth in the mind, — involving a changing and a change-recording structure; but what could justify a second leap to growth with a tendency to vary, and then a third to growth fixed by the pressure of environment, it is very difficult for a sober thinker to answer. And yet this young mathematical genius, who ought to be something of a logician, does not hesitate to dare each of these flying leaps in succession.

To a cool and considerate thinker, it would seem to be transparently clear, that, in this so-called induction, mere words, or the metaphors out of which words are made, are the cobweb bridges which are thrown over these chasms of thought; that the confidence with which the words *change*, *record of changes*, *growth*, *variation*, *re-action of environment*, are applied indiscriminately to a tree, an animal, and the mind in the same senses,

when in many cases the similarity is most attenuated, is a very remarkable phenomenon in our modern scientific thinking. And yet upon the legitimacy or the illegitimacy of this confidence rests the theory which evolves matter and spirit, life and intelligence, affection and conscience, man and God, in a series of ascending spirals, which vanish into the unknowable.

But we have not yet finished Professor Clifford's maiden essay. He is not content with the analogies already referred to. Looking again at the changes in a tree or an animal, we find them reducible to three types, viz., *change in growth, change in structure, and change in function*: and, as we look also at changes in the mind, we find the same three types repeated; confirming our confidence that the law of evolution is applicable to both. We consider each apart as treated by our author; it being understood that we give his thoughts, not his words, the underlying rather than the outspoken logic: or, to follow the old metaphor of logic and rhetoric, we give the clinched fist and not the outspread palm.

We begin with *growth*. Growth in a tree consists of increased bulk or bigness. It results in an access of particles or accretion of material by nourishment. Here the professor allows himself a slight digression, being led astray by the subject-matter. He gives a theory of the normal size, and the finishing stages by which normal dimensions are attained; remarking, that, as a growing plant notoriously takes in nourishment through the whole of its external surface, the surface increases in a proportion continually inferior to that of its mass, till finally it is brought to a standstill, and growth terminates.

What now is growth in the mind, and how do we reckon the law and limitations of its normal growth? How is the analogy made good which is looked for?

If the mind were assumed to be a brain-mass, with so many cubic inches as its normal size, or with so many thousand brain-cells, as Professor Bain has so carefully computed in his "Mind and Body," all needing nutriment, then the analogy would hold. But Professor Clifford had at that time not advanced so far as this, but is satisfied with loosely treating the growth of the mind as identical with the "acquisition of new knowledge." Unconsciously adopting but not avowing the conception of Hume and J. S. Mill, that the mind is a bundle or series of impressions, he reasons, that, as the mind gains new knowledge, *the bundle* grows bigger and *the series* grows longer. Moreover, he reasons, that as long as we acquire faster than we forget, i.e., gain more ideas than we lose, the mind continues to grow. This may happen in infancy and childhood; but, when we lose ideas as fast as we acquire them, the mind has attained its normal size, for a similar reason to that which holds in a plant, as already explained. "The growth ceases as soon as this balance is attained. So that in this first law, you see, there is an entire analogy between the two cases." All which is more luminous than convincing.

We are taught, "in the next place, that the mind experiences changes of *structure*; that is to say, changes in the shape and arrangement of its parts." Parts of the mind are ideas. Arrangement of ideas we can form some idea of, but "shape" of ideas is a little too much for us to understand; and the author does not relieve us. Upon arrangement, however, he throws a little light. Ideas of different qualities never connected before are brought together "by the qualities being found to exist in the same object." Other ideas are newly connected by new scientific relations; and so ideas are re-arranged, — by a process similar, we suppose, to

that by which inorganic material is redistributed, and gathered into organic tissue.

“Lastly, changes of *function* take place. Everybody knows how the mental faculties open out and become visible as a child grows up.” Here the author stops. He has struck a new vein. He has not explained what a function is, either in a tree or an animal. He has not shown how increase in size, and change of structure, in either involves the manifestation and the activity of new functions. Nor has he shown how a similar process takes place in the mind. Before the analogy which he seeks for can be set up between what are called functions in each, the nature of function should be correctly understood in at least one. Otherwise we reason in metaphors, and venture flying-leaps from matter to spirit, when the audacity of the jump or the applause of the spectators is not certain always to save the leaper from an ignominious souse in the mire. In the present instance, the mire is a confused impression that ideas by increasing in mental mass, and re-arrangement in mental structure, can somehow re-appear in mental faculty, and that faculty in mind is analogous to function in a tree or an animal. The writer has plainly lost his head in the excitement of the leap, having begun with the recognition of ideas only, and emerging after his plunge with the assumption of faculty as the consequence of growth.

And yet he seems very well satisfied. He picks himself up without knowing that he has fallen, and concludes “that the actions which go on between the individual and its environment may be reduced to the same three types, viz., of growth, structure, and function, in the case of the mind as in the case of any visible organism.”

He next resumes a question which had already been suggested: What is a change or growth *for the better* in

the organic and the spiritual? He finds, that when an organism, whether a tree or animal, grows better, its parts "get more different" and "get more connected," i.e., "the organism becomes more different from and more connected with the environment, and the organism gets more different from and more connected with other individuals," in these successive processes of differentiation and integration. Similarly the mind is developed from the lower to the higher as its parts are separated and connected with another, as the mind itself is separated from and united with its environment, and as it is separated from other individuals and socially united with them. The parts of the mind are ideas. Ideas are confusedly blended when consciousness is undeveloped. Ideas are separated when light is distinguished from darkness, when one percept, and another, and another, is separated by sharp discrimination. They are united when any coincide within the same limits and come into a whole. These wholes are next discriminated from other objects previously discerned as ideas, and anon united with another into other ideals. Next, one of these ideal wholes begins to drop off from the mind in which it had existed as an idea, and anon is united with the mind itself by the very act by which the mind distinguishes it from itself. It becomes "something outside of ourselves, a real thing different from ourselves;" and yet, as the number of the relations by which it is discriminated is increased, the more intimately is it wrought into the mind that discerns it. So true is this, the author waxes warm in asserting, that, the more we discriminate nature into parts, the more our minds are assimilated to nature; so that, as we gain in the discrimination and union of our ideas, we grow into new faculties, or new senses to beauty and truth. This is true of the individual and also of the race.

All this is very fine, and would be true were there not two oversights. First, the parts of a tree and an animal are not analogous to ideas in the mind. Next, let it be that these parts grow by these successive actions and re-actions of separation and unition, the process of growth is not analogous to the several acts of discrimination and unition by which the universe of ideas is built up by the perceiving mind. Did the analogy hold, the ideas would repel and attract another in alternate rhythm, just as do the particles of the tree and animal. The precise point in which the analogy does not hold is unconsciously expressed by Professor Clifford himself when he says, "This notion, then, of a thing being real, existing external to ourselves, is due to the *active power of the mind which regards it as one*, which binds together all its boundaries." Once introduce this notion of an active power of the mind, and the analogy of its processes to those of the growing tree, and the growing animal wholly fails. Ideas no longer separate from and combine with one another as the parts of a tree or an animal, but the active power of the man unites and parts them. We cannot say when we pass the line which divides the tree and animal, that the process of the self-differentiation and integration of parts is intensified into the feeble beginnings of the analysis and synthesis of ideas. But we are forced to say, that the processes cannot be assimilated after the analogy proposed, and that there is no evidence that the one can be developed into the other by the combined action of inner variation or external environment, or by any known or conjectured physiological operation.

The professor concludes his arguments with an exhortation to his hearers, which is interesting for two reasons. It illustrates the revolutionary condition of his mind over the new-found doctrine of evolution, and

it brings out a glaring inconsistency between the doctrine itself and the inference which he derives from it. The doctrine is, You are and you must be what your nature, as formed for you, is capable of becoming by the joint action of its tendency to variation, and the holding and fixing power of its environment. The exhortation derived from this conclusion is, cultivate variation, swell and sprout in every direction, try all kinds of experiments in odd ways, if so be that some lucky *sprout* may be caught and fixed by some favoring environment; and nature and yourself shall rejoice over the fortunate combination. This conclusion was all very natural for this strong-hearted and enthusiastic youth, who was rejoicing in the possibilities of the future, and rejoicing also in the promise of his new-found gospel of evolution. The exhortation, too, was natural. It could with difficulty be repressed. It was only unfortunate as being inconsistent with the doctrine from which it was derived. For only as the mind possesses an energy of its own can it properly be exhorted and inspired to the exercise of its powers in the direction of individual activity. But inasmuch as all the energy in the case, according to the theory, rests in the ideas, we cannot see the propriety of any exhortation at all. Moreover, it would seem, to the unsophisticated mind, that the exhortation itself is properly a part of the environment to the minds addressed; and the sole function of the environment, so far as they are concerned, is to fix and favor, or to scatter and repress, their tendency to variation. We conclude that the author must have forgotten the correct application of his new faith in the fervor of his exhortation, and reasoned as though he actually believed in "an active power of the mind" as something other than the parts of a tree or animal in its functions and laws.

We have dwelt so long upon this brief lecture, because it was the first exposition of the author's new philosophy, and the foundation-stone upon which he founded his new faith. For this reason, if for no other, it cannot but excite a special interest, and particularly inasmuch as he never changed or disavowed it in any essential particular. It expresses in brief also the statement and the argument of the doctrine of atheistic evolution. As such it is not distinguished for any special coherence of logic or felicity of illustration. It is, however, clear, outspoken, simple, and short. It contains the principal article of this creed, and the substance of all that can be said in its favor. The author first endeavors to connect two spheres of phenomena, the organic and the physical, under a common relation, and to explain them by a common analogy; i.e., of *growth*, which means *development*. If the analogy holds between these two disparate spheres, it may hold between spheres that are more widely remote. If it holds between a tree and the intelligent spirit of man, it may hold between nebulous matter and the poems of a Goethe and Shakspeare, and the affections, thoughts, aspirations, that wander through eternity, and connect man with God and immortality. If the movement here called growth is independent of freedom in man or design in nature, if it proceeds of itself by alternate pulses of variation and integration, then there is neither need nor place in the universe for God. So Clifford reasoned with such directness of logic as that with which the rifle-bullet speeds to its mark, not without the cruel shriek of exultation with which the bullet rejoices over its work of death.

Many professed evolutionists, who adopt the same logic, do indeed seek to stop short of these extreme conclusions. They find a place for spirit and for God in

the plan of evolution itself, in the intricacies of the dependencies, and the energies of the forces, and the sustained length of time which the doctrine involves. We have no disposition to dispute at this point the sincerity of their faith.

We beg leave to call their attention to one point, however; and that is, to the weakness and cloudiness of the analogies between the organic and the spiritual which theistic evolutionists so frequently accept, and the facility with which they accept this theory as a "working hypothesis." This essay of Clifford is an intelligible example of what we mean. Acute and quick as he was, and trained to all the subtleties of mathematical analysis, skilled, moreover, in the art of felicitous exposition, he is carried away by the double or triple sense of the term development, and stumbles into complete confusion and logical discomfiture for failing to discern the difference between the process of growth in a tree, and growth in mental activity and acquisition. His example is not so peculiar as would seem at first thought. Development itself, in any of the many senses which it bears, gives pause and wonder to our analysis. These senses are also consistent with manifold theories of force, law, or purpose. The scientist used to the precise terminology of science in vegetable or animal life, and unused to any sharp thinking or precise terminology in intellectual or spiritual phenomena, is easily tempted to accept terms in a scientific signification which are metaphorical in the extreme; to adopt evolution as a "working hypothesis," i.e., as a metaphysical theory, and to proceed to work his reasonings and his conclusions by it as though it were verified by facts. It were unfortunate for the scientist and for science, and the logic of both, if he should be discovered, even to himself, in making such fearful blunders as our

enfant terrible has done in this lecture, which he delivered with such exuberant and irrepressible confidence, and which his editor does not think it necessary either to explain or excuse.

Leaving the first lecture, we select, for the next of those which comes within our plan to consider, the elaborate discourse delivered in 1872 before the members of the British Association, "On the Aims and Instruments of Scientific Thought." This lecture is remarkable as being one of the most deliberate attempts to limit the sphere and the methods of scientific knowledge to the acts and results of simple sense-experience which has been put upon record during the present century. It carries us back to the bald and unsupported assertions of the school of Helvetius, in respect to the nature and methods of our higher knowledge. It is written in serious earnestness, however, without the slightest indication of a frivolous or trifling spirit. The method is analytic. The author begins by asking what is scientific thinking. After a few preliminary efforts, he answers at last by saying, "It is the application of past experiences to new phenomena whenever such experiences have become sufficiently uniform and exact. There is, however, no absolute exactness in any thing. All exactness is proximate. It is enough that the objects compared or measured go beyond our sense observations and measurements. Pure mathematical quantities and their relations are fictions. So are absolute uniformities, in phenomena or operations. It is enough that we can detect no errors. The questions we ask must also be *reasonable*; and they are reasonable whenever we have at hand experiences such as have been described, — that *are sufficiently exact and sufficiently applicable*." To the questions whether there is any thing beyond our experience which is irresolvable,

absolute, or unknowable, it is enough to reply, As fast as we get new experiences, and can apply them to new cases, we shall go on doing so. That is all that we can say, and with this we ought to be content. To introduce the ideal element of pure mathematical quantity in time and space in order to explain exactness, or to assume adaptation or causation or analogy in nature in order to explain reasonableness, is gratuitous, inasmuch as we are limited to the single activity already described. We find ourselves acting in the ways enumerated; and by these methods we explain our existence, our modes of activity, our science, its aims and instruments, and have finally reached, as the formula which meets every case, the single uniformity or law which we call evolution.

In passing over this lecture, with this brief synopsis, we have left untouched a host of gratuitous, untenable, and inconsistent assertions. We hardly need say, that the theory of scientific thought here outlined is insufficient to explain or justify any species of scientific activity, or to sustain any kind of scientific enthusiasm. There is no need to say that such a philosophy of science is necessarily atheistic. Simple observation of the uniformities of sense, or even of spirit, however exact or reasonable, could never raise the question, much less answer, Is there any thing beyond the finite? The denial of causation and purpose and geometrical quantity rules out any possible suggestion of a self-existent and Personal Intelligence.

We are forced to omit, for the reasons already given, the detailed expositions of Clifford's theories of physics, and the extended explanation and vindication of his views of the metaphysics of pure mathematics, which are given in other lectures and essays. We pass to his essay entitled "Body and Mind," which was written in

1874, six years after the essay on "Mental Development," when the doctrine of evolution had become hardened in his mind into an axiomatic truth. No more rankly outspoken materialistic atheism could possibly be conceived than that which this essay avows and defends. The frankness of the avowal is, however, of little moment. We are solely interested in the arguments by which this double conclusion is reached. Professor Clifford begins by asserting that philosophy and science are only organized common sense; that, if more questions in either have not been settled, it is because the methods of inquiry in both are defective. Certain questions are no longer open: some may be presumed to be settled by scientific men, such as the possibility of squaring the circle. In like manner, there are questions in respect to the mind and body which have ceased to be open questions, because science has had her word to say about them. "And they are only open now to people who do not know what that word of science is, and will not try to learn it." This sounds somewhat dogmatic and priestly. We look forward with curiosity to know what these questions are, and how they are settled. We are not left long in uncertainty. The field of knowledge is divided into three departments; viz., inanimate matter, giving us physics; living bodies, involving physiology; facts and relations called consciousness, giving us psychology, ethics, etc. "The gulf" between the first two of these groups, which he dexterously calls *physics* of inorganic bodies and *the physics* of organic bodies, "has in these last days been firmly bridged over." For a description of the bridge, he refers to Professor Huxley's lecture at Belfast. This means, that, among the questions which are considered settled, this is one: "that the science of organic bodies is only a *complication* of the science of

inorganic bodies." The unsettled question which he undertakes to answer is, whether it is not possible "to construct some similar bridge between the now united science of physics, which deals with all phenomena, whether organic or inorganic," and "the other science, the science of consciousness"?

We must first do justice to the difference between the two sets of facts or phenomena. That there is a difference, and it is observed from primeval times, is evident from the proverb, "Put yourself in his place," which implies, that, in men and animals, there are certain facts of individual consciousness beyond what we call facts of physical organization.

These facts of consciousness, if the logic means any thing, are covered by the term "yourself." Very unfortunately the author observes, certain primeval men very early got a notion that this word *self* meant something more, i.e., a spiritual, that is, a ghostly, substratum of these phenomena of consciousness. This notion came, not as the psychologists say, by direct introspection of an entity directly observed, as some like Descartes have taught, nor by a subinduced *noumenon*, or a synthetic unity of apprehension, as Kant barbarously explained, but it came in consequence of indigestion,—in a dream. Primeval men, being given to over-eating, would naturally have dreams of their fellow-men,—talking, and, it may be, fighting, with them. From these experiences they inferred that these dream-images actually left the bodies of their neighbors and came into their own, and they saw and heard them, and possibly fought with them. These spirit-images were very naturally taken to be the spiritual substrata or agents of the conscious phenomena, and became the first occasions of the notion, that there are two sub-

stances or agents in the universe; namely, material and psychical.¹

Professor Clifford proceeds to answer at length in Mr. Huxley's words.

But what has science to say to all this? First, "The brain is the organ of sensation, thought, and emotion; i.e., some change in the condition of the matter of this organ is the invariable antecedent of the state of consciousness to which each of these terms are applied." This the author asserts is believed by all men of science. We deny that there is any evidence for the proposition in its terms or meaning. It certainly has not been verified by observation or experiment, that a definite change in the brain corresponds to every definite experience of consciousness. That some change in its condition may attend each spiritual state may be true; but that one precedes the other (is its cause and its sole cause), or has a counterpart to all its elements, is very largely an inference.

Second, "The movements of animals are due to changes in the form of the muscles, and this change of form arises from a motion of the substance of the nerves that go to them." If by motion is meant some molecular change through the length of the nerve, this may be assented to.

Third, "The sensations of animals are due to a motion of the substance of the nerves which connect the sensory organs with the brain." *Due*, that is, solely! From this proposition as thus amended, be-

¹ We submit whether the conceptions now substituted for the ghostly ego, viz., of "a series of ideas," "a stream of ideas," "a bundle of impressions," or "a thread of consciousness," or "a series of feelings which is aware of itself as past or future," might not be accounted for by the more delicate viands on which philosophic man "has learned to feed, now that he has grown so great," and the more refined images which visit his dreams.

cause it is thus intended, we dissent. It carries with itself most of the conclusions which the author would establish. This plank of the proposed bridge must be rejected; and, if it fails, the bridge cannot be complete. And yet the author appears not to have dreamed that it would not be assented to, for he states it without any comment or proof. The fourth proposition we omit, as not denied. The fifth is in substance, that the motion of a part of the brain or ganglion, excited by a sensory nerve, leaves a tendency to be moved in the same way; and the resuscitation of the motion is the physical cause, i.e., the sole cause, of every act of memory, including the presentation of the object remembered and the act of remembering, and its reference to time. This memory is twofold, ganglionic and cerebral. What we have said of 1, 2, 3, applies to this.

Besides these direct excitements, resulting in sensation, and prompting to bodily action, there are side excitements of fibres associated with one another, resulting, not in bodily action, but in tendencies to action. This excitement of brain-fibres depends on the flow of blood to one fibre or another. Upon which we have this luminous remark, "And it is a curious property of the nervous system, that *it* can *direct* the supply of blood which is to be sent to any part of it. It is possible, by directing your attention to a particular part of the hand, to make it sore; and thus the marks called *stigmata* have been produced!" Without noticing the edifying part of this side-blow at the superstitious, we ask only, What is the *it* called the *nervous system*? Is it the whole, or some part? If the whole, how could the whole of the brain direct a supply of blood to a part? And what is the *attention*, and who or what directs it to the hand when the *stigmata* follow?

From sensations and brain mechanism he proceeds

to the facts of consciousness, which he wishes to reach by his bridge. The first point asserted is, that any so-called present state of consciousness is complex, consisting of several elements in different degrees of energy. Of any two or more of these, if one occurs a second time, its associates tend to recur; thus *a link*, whatever that may mean, is established between them. These links are not only between sensations and sensations only, but also between sensations and exertions. Trains of conscious states may intervene between the one and the other; and exertion is also *voluntary* and *involuntary*, whatever these epithets signify. The author does not tell us, and we certainly cannot explain by means of any data which he gives. He does, however, attempt to tell us what *judgment* is, — that act which is supposed to be by eminence intellectual, and to lift men out of the lower regions of sensational activity. This is his definition: “*Any beginning of an action is what we call a judgment;*” i.e., any experienced or revived sensation, which awakens an impulse to action, is the nucleus of intelligence. “If you consider what a proposition means, you will see it must correspond to the beginning of some sort of exertion. When you say that A is B, you mean that you are going to act as if A were B.” “The assertion that the water is frozen implies a bundle of resolves, which means, Given certain other conditions, I shall go and walk upon it.” We grant that the impulse to act may sometimes attend a judgment, but it does not for this reason define it. It may be true, that, when some of Professor Clifford’s readers say or judge there is no God, they will act as if there were none; but charity bids us to judge, or at least to say, that it is one thing for Professor Clifford to judge, and another to act the lie, *there is no God*. This doctrine of judgment is not,

however, original with our author. Professor Bain is well known as its author, as also of the kindred notion that belief is resolved into expectation. Both are poor makeshifts, to which the cerebral philosophy is driven, under the difficulty which it finds of accounting for any connection of conceptions or ideas higher than brain mechanism provides for.

From action Professor Clifford proceeds to character. Character is concerned only with voluntary action; and in "voluntary actions what takes place is that a certain sensation is communicated to the mind, the sensation *is manipulated by the mind*, etc." "The character of the person is determined by the nature of the manipulation." And pray, Professor Clifford, what place in your theory have you made for the mind or its manipulations? Indeed, what is the mind but the brain-mass; and how can the brain manipulate at all? Even if we allow that *it*, the nervous system, can direct the flow of blood, how are sensations manipulated so that "conclusions are drawn, and thus a message is sent out which causes certain motions to take place"?

He adds by way of caution, that, as the result of these manipulations, character slowly changes, but only slowly.

After this analysis of the second class of facts, viz., the facts of consciousness, the author traces the parallelism between them and the facts of the nervous system, the facts of the first class. As the physical stimulus of the sensory nerve is followed by the impulse of the motor nerve, so the sensation is followed by the response of the mental fact that moves the hand. So is it universally of all mental facts: they are parallel to some changes in the brain. His logic is this. Because it is true of a *limited class* of physical phenomena that they depend on (partially, some would say, Pro-

fessor Clifford, wholly), or are definitely traceable to, nervous or brain changes, therefore it follows that *all* mental phenomena are dependent as completely in every particular on correspondent brain or nervous changes. We need not stay to indicate where this logic fails.

He proceeds, however, to observe, that, though this parallelism is so close and complete, there is an enormous gulf between the two classes of facts. The phenomena of the one class are open to the observation of all. They are called objects, or phenomena. Facts of consciousness are known only to one man. Of the physical facts, we know that they are complete within themselves. From the stimulus of the light to the eye as its motions proceed to the brain along the track of the sensory nerve, and return by the path of the motor, "these motions are perfectly complete physical trains; and every step is fully accounted for by mechanical conditions." There is no force lost and none created, in nerve or brain or muscle. But how is it with the other effects, and the force which produces them? This is the answer: "Therefore it is not a right thing to say, for example, that the mind is a force; because, if the mind were a force, we should be able to perceive it." "Again, if anybody says that the will influences matter, the statement is not untrue, but it is nonsense. The will is not a material thing, it is not a mode of material motion." "The only thing which influences matter is the position of surrounding matter or the motion of surrounding matter." It will not be forgotten by the attentive reader, that the writer of these sentences had previously spoken of the nervous system as directing the supply of blood to the parts of the brain, and of the mind as capable of so directing the attention to a part of the hand as to determine the blood to a definite place in the organism, and thus produce *stigmata*. It

would seem that the mind or will in such cases might properly be called a physical force. In any event, there is a clear distinction, which Professor Clifford has more than once admitted, between the power which *directs* and the power which originates physical force.

As the result of this reasoning, he concludes that the body is "a physical machine, which goes by itself according to a physical law; that is to say, is automatic." "But it is not merely a machine, because consciousness goes with it." "The mind, then, is to be regarded as a stream of feelings which runs parallel to and simultaneous with a certain part of the action of the body," etc. "An automaton, however, is not a puppet. A puppet is moved without, by strings or wheels. An automaton is moved from within. We act as our characters impel us. But our characters are made largely for us, as we inherit from others. We impart to others also." To the objection that we exclude freedom by this conception, it is replied, But what higher freedom can we have or desire than to act of ourselves as our characters impel? Rather should we reason, If we are not automatic, we are not responsible. We ought rather to judge that the doctrine that Providence or destiny adds other forces than these of brain and inherited character is the essence of immorality.

Having proceeded thus far, the author reviews his course to discover how far he has succeeded in establishing a bridge between the two classes of facts; viz., the organic and the psychical. He concludes, that inasmuch as brain and nervous organism, so far back as we know them, are probably attended by corresponding parallels of consciousness, if we accept the doctrine of evolution we must believe, that in the very lowest organism, even in the *amæba*, there is something inconceivable to us, which is of the same nature with our own

consciousness. We are forced to another step even. We cannot stop at organic matter. Following the law of continuity, and holding that the organic by physical processes were formed from the inorganic, we must believe, that to every motion of matter which corresponds with mental facts in ourselves, that is, to every motion of every molecule, there is a correspondent sensation, or something like it. As there is presumed or known to be a parallelism between a complex brain and a complex of consciousness, and as the organic brain is physically developed from unorganized matter without breach of continuity; so mind, by this parallelism, can be traced in its beginnings so far back as there is physical motion in a molecule.

One leap more, and the author attains his loftiest flight. The so-called physical objects, including the organic, are, as known by and to us, only feelings, over against which we postulate a correspondent reality. But, if the reality can correspond to a mental feeling, this must be made of the same stuff with it. "What I perceive as your brain is really in itself your consciousness, is you; but then, what I call your brain, the material fact, is merely my perception." The two elements are not indeed the same, but they must be made of the same stuff.

Therefore this solid universe, with its phenomena present to sense and its phenomena present to consciousness, may at any instant be resolved into particles, which by motion become the stuff that mind is made of.

Excepting this last speculation, and one or two other points as the opinion expressed in respect to the transformation of energy in the brain, Professor Clifford declares, that the doctrine he had expounded "is the doctrine of science at the present day."

But Professor Clifford does not rest here. In view

of these conclusions as the last words of science, he asks, Have we any authority for believing that consciousness can exist without a nervous system? We answer, all the consciousness which we know of is thus associated. This fact of itself creates a probability, and should make us cautious in concluding in any direction opposite to uniform fact. But if the one general conclusion is established, that motion and consciousness everywhere attend one another, then to believe that consciousness could occur without its pendant manifested to the senses would oblige us to deny that matter is what our belief in the uniformity of nature forces us to believe it to be; viz., always manifest to the senses, and that mind is always connected with such a manifested basis. We conclude, then, consciousness without a material counterpart is an absurdity.

The next question is, whether the physical universe, or that portion nearest to us, may not be one vast brain, whose movements are paralleled by a consciousness as complex in its elements and as vast in its grasp? This is just possible, he says: but such a brain cannot be analogous to any we are familiar with, because in these there are disturbances which are parallel to the conscious acts; and in the *inter-planetary spaces there is no evidence of such material substratum*. But is it not just possible that the stars are atoms in some vast organism which might be adequate to such conscious acts? To this he gravely replies, It is just possible. But, were there such an organism, it could not be affected through vision of events in the solar system; and, according to any laws of matter known to us, "it could affect the solar system only by its weight."

The question is in substance this: What is the last word of science respecting the being and agency of one Eternal Mind? To this question he replies, —

“On the whole, therefore, we seem entitled to conclude, that, during such time as we can have evidence of, no intelligence or volition has been concerned in events happening within the range of the solar system, except that of animals living on the planets. The weight of such probabilities is, of course, estimated differently by different people; and the questions are only beginning to receive the right sort of attention. But it does seem to me, that we may expect in time to have negative evidence on this point of the same kind and of the same cogency as that which forbids us to assume the existence between the earth and Venus of a planet as large as either of them.”

In this delicate and periphrastic phraseology does our *enfant terrible* utter the conclusion which he is compelled to derive from the facts and principles in which all who have a right to call themselves men of science are agreed, viz., there is no God; because there is no evidence of a brain large enough to perform the functions of the Eternal Spirit. We must own that we are surprised at the subdued tone of the announcement. We had been prepared for a more emphatic burst, befitting the tremendous conclusion. We conclude that our author, like Bottom in the “Midsummer-Night’s Dream,” while he had at first resolved, “I will roar, that I will do any man’s heart good to hear me,” on second thought resolved “not to frighten the ladies,” and finally, “I will roar you as gently as any sucking dove; I will roar you an ’twere any nightingale.”

But let us pause a moment on the height of this great argument, up which we have been conducted by many laborious steps, and survey for a moment the steps which have been laid for us. Has our guide succeeded in his attempts first to bind all phenomena, the inorganic, organic, and conscious, by one continuous bond, thereby excluding from the universe spirit as man, and spirit as God? As we followed his positions we questioned not a few of them. The first step assumed the

whole argument, and not a few which followed were such as the logic of true science would hesitate to affirm. Consequently our breath has not been quite taken away by the appalling conclusion in which there is nothing appalling but its effrontery, and nothing redeeming except the studied moderation of its diction.

But Professor Clifford does not leave us to our reflections. He anticipates that the conclusion will leave a blank to many hearts, "because they take away the objects of very important and wide-spread emotions of hope and reverence and love," and "that they destroy the motives for good conduct." To this he replies, that healthy emotions are felt about facts and not about phantoms; and the question should never be, what is pleasing or displeasing to our feelings, but what is true. To reason for or against evidence from the relation of belief to action is most demoralizing. Then, these little guesses of ours are very untrustworthy any way, when, perhaps, "there is not one man in a million who has any right to a definite opinion about them." Such men are, of course, certain eminent psychologists like Professor Alexander Bain, or certain comprehensive philosophers like Mr. Herbert Spencer.

But there is one truth which all men believe in, and that concerns the distinction between right and wrong. "Duty to one's countrymen and fellow-citizens" "is in all healthy communities the one thing sacred and supreme." Whether or not, in addition to this instinct, we have the voice of an unseen person also, the voice of the instinct itself "loses nothing of its sacredness, nothing of its clearness, nothing of its obligation." This reassures us somewhat. We confess that we have our fears lest these theories of science of the soul will fail to redeem some of these fair words about duty.

We proceed then to inquire, What, then, is duty and

right and conscience and virtue as explained by their expounder? We find his answer in the essay on the "Scientific Basis of Morals" and the lecture on "Right and Wrong: the Scientific Ground of their Distinction," both produced in 1875.

Declining the attempt to analyze Clifford's arguments in order, we give the most important definitions and conclusions. In the first of these essays we find the following: The moral judgments and feelings are the product of the social instinct as modified by the law of evolution. These grow out of the *tribal self*, in which every human being is more or less distinctly a sharer. To understand the import of this term, we need to consider the several senses and applications of the term *self*. This is properly and primarily applied to "the stream of feelings which make up a consciousness regarded as bound together by association and memory." Next it is applied to a select portion of these feelings, not including the corporeal; although strictly "my foot is certainly a part of myself, because I get hurt when anybody treads on it." When we desire something in the future, we personify or abstract its future consequences in our feelings, and think of it as suitable or unsuitable to ourselves, — either tribal or individual. With the simpler races the conception of self is less developed, and more indefinite and wide. It is universally expanded so as to include one's tribe, which is thus an expanded self, or stream or bundle of feelings. "The savage is not only hurt when anybody treads on his foot, but when anybody treads on his tribe." All his future hopes and fears reflect the enjoyments and sufferings which make up his future tribal experience. "We may doubt whether the selfhood of the tribe is not earlier in development than that of the individual." "In the highest natures it

finally takes the form of humanity." Under the law of natural selection, *piety* toward the tribal self grows necessarily strong; those groups of men in which it is weak being extinguished by the struggle for existence. The fittest to survive are those whose intenser piety toward this tribal self is the strongest. The tribe soon finds out, that, to exist, it must love piety towards itself. It likes the deed which conduces to its welfare. It likes the character, the man, from whom the deed proceeds. Similarly it dislikes the deed and the man who is *impious* towards itself. By and by the man learns to judge of his deeds and himself by occupying the place of this tribal self, and this is self-approbation and remorse. Next comes *right*. "Right actions are not those which are publicly approved, but those whose public approbation a *well-instructed* tribal self would like." Moreover, there are two ways of expressing disapprobation. "To chase a man away as a noxious beast, and to punish him for doing wrong, these are two very different things." In the second case we desire to improve the character of the offender, or the character of those who witness his punishment.

Responsibility belongs to a man who "can be punished for doing wrong with the approval of the tribal self."

The *categorical imperative*, or the obligatoriness of duty, results from the circumstance, that the ethical maxims are matured by natural selection, so that they are not disputed. "Hence it is that the moral sense of the individual, though founded on the experience of the tribe, is purely intuitive: conscience gives no reasons." But though in their form the commands of conscience are unconditional, in their application to the individual they are subject to many conditions. They declare, If you do not obey, the tribe will say, in the

name of the people, I hate you; and the voice of the tribal self will say to the man, I hate myself.

In its derival of moral judgments from the imagined judgments of society, this theory is identical with that of Adam Smith. It differs from it in one or two very important particulars. The theory of Smith assumes a conscious distinction between the individual self and his fellows. It connects the two by a natural sympathy with the feelings of judgments of our fellows, under the operation of which each man imagines his fellowmen to approve or disapprove himself, then sympathizes with their favorable or unfavorable judgment and feelings, and thus, by "putting himself in their place," builds up a conscience for himself.

The theory of Clifford finds its origin in the failure to distinguish the two, or the necessary blending or absorption of the individual self in the tribe, — a blending so complete, that "the savage is not only hurt when anybody treads on his foot, but when anybody treads on his tribe."

In Smith's theory, the conscience, or second self, is built up in the conscious life by the processes of association in the individual soul enforced by individual sympathy. In the theory of Clifford and Darwin, the indiscriminating identification of the tribal with the real self grows into a commanding law under the operation of natural selection, inasmuch as every tribe in which it is not strong is wiped out of being in the struggle for existence, and tribal feeling becomes supreme by heredity. The theory of Smith does not exclude voluntariness and individual responsibility. The theory of Clifford resolves the self into a stream or bundle of sensations, which after a long time are somehow expanded so as to include our fellows. It makes no provision, however, for voluntary action or responsibility.

The important subject of voluntariness or freedom, as related to moral responsibility, is indeed discussed at wearisome length in the second of the essays referred to, in which the author usually logically adheres to the position, that in brain-movements, and their parallels in conscious phenomena, we do just as our organized brain and parallel impulses would make us do, and that any other explanation of responsible action is irrational and immoral. One singular exception occurs, which is more glaring than the similar oversight which we have already noticed. Suppose, he says, that by memory several motives are set in action. "Then *I* choose which of these motives shall prevail. Those who carefully watch themselves find out that a particular motive is made to prevail by the fixing of the attention upon that class of remembered things which call up the motive. The physical side of this is the sending of blood to a certain set of nerves; namely, those whose action corresponds to the memories which are to be attended to." Again, "We distinguish this mass of passions and pleasures, desire and knowledge and pain, which makes up most of my character at the moment from *that inner and deeper motive-choosing self which is called reason, and the will and the ego*, which is only responsible when motives are voluntarily chosen by directing attention to them." These extracts need no comment: they are manifestly oversights. The author had obviously forgotten his system and its logic when he wrote them.

Otherwise he is consistent throughout. Moral law is a natural growth, the product of circumstances. Under the law of development, virtue is not good because it makes the tribe strong, but virtue is good because the strong tribes kill off the weaker. The excellence and obligation of goodness are not derived from any permanent fitness or adaptation to the well-

being of society, but from the fact that society, under the laws of descent and struggle, has propagated the social instinct into unquestioned supremacy.

From these principles our outspoken and generally logical reasoner derives the following inferences, which he does not hesitate to avow : First, "Right is an affair of the community, and must not be referred to any thing else." "The first principle of natural ethics is the sole and supreme allegiance of conscience to the community." "An immediate deduction from our principle is, that there are no self-regarding virtues properly so called ; those qualities which tend to the advantage and preservation of the individual being only morally right in so far as they make him a more useful citizen." "The virtue of purity, for example, attains in this way a fairly exact definition." "My happiness is of no use to the community except in so far as it makes me a more efficient citizen." Veracity is obligatory for a similar reason. Whenever deviations from it are excused, the community is in fault. Veracity to the community depends on faith in man ; that is, in the individual man. We Englishmen, however (perhaps because we are strong in the tribal instinct), abhor the man who tells a lie, or who suggests that a lie may sometimes be excused for its usefulness.

Such is a brief *résumé* of the ethics of our rampant philosopher. It will be remembered, that, when he had demonstrated that science knows there is no God, he had cheered and comforted us by the faith that right remains and is eternal. This led us to search after his conception of the nature of right, and the grounds of our confidence in its supreme and venerable authority. We have followed him step by step in every separate and subtle track of his analysis, and with what result ? "Might makes right. All duties are merged and re-

solved into the growing predominance of the tribal self. Man emerges from the brutal condition by becoming more social. As he loses himself more completely in the tribe, the tribe takes more and more complete possession of his being, and gives greater energy to his social nature. At last the organized community writes its behests in his very brain, and they are henceforth enforced by an unquestioned authority."

The most superficial reader of ethical systems will not fail to recognize the close affinity of this theory with the tendency of the ancient schools to exalt the state as supreme. The ancients, however, in their theories, never wholly overlooked the rights and duties of the individual man, however completely they disregarded them when they came into conflict with the interests of the community. Even the modern theories which are most nearly allied to the one before us have verily ventured to conceive of moral relations as an outgrowth of unconscious impulses into that unquestioned predominance which gives to conscience its sacred authority, and to faith in the ultimate triumph of the right its capacity to dare and to die.

Professor Clifford begins by materializing the spirit and denying its immortality. He next degrades the intellect and debases its methods so far as to belittle science and eliminate the Creator. With re-assuring words he cheers us with the declaration that right and duty and virtue will ever remain. But right and duty and virtue, in their turn, are resolved into chance products of those blind and balanced forces which have built organized society up to its present momentary structure. To the individual man is denied the not ignoble privilege and dignity of offering himself a *willing* sacrifice upon the altar of the public welfare. Were there such a self-sacrificing impulse, it would not be the choice

of his loving soul, but the product of a thousand lucky accidents, which the mighty ocean of being had tossed into momentary existence, — a glittering bubble from the crest of one of its yeasty waves.

Nothing is more noticeable to the reader of these essays than the contemptuous but half-suppressed scorn with which their author rejects the scientific possibility of a personal God, and the passionate fervor with which he enforces the charms and authority of duty and truth. A profounder analysis and a more teachable temper would have taught him, that a satisfactory science of nature and of duty requires as its fundamental axiom the existence of an intelligent Creator, and that a materialistic evolution which rejects God can explain neither duty nor science nor man.

A single reflection occurs to us in connection with Professor Clifford's "Theory of Ethics." If all duty is resolved into our allegiance to the community, and if scientific men are alone competent to understand those truths and facts which may guide the judgment of the community, and if in respect to some of the most fundamental truths only one in a million is so qualified, then it follows, that duty to the community may require that a priesthood of science should assume to itself the functions of regulating the interests and actions of both societies and individuals. The process of natural selection, as we ordinarily conceive it, would be greatly accelerated if the ignorant and obstinate, particularly those of the fanatical and religious sort, should be weeded out by summary methods. Under the law of the survival of the fittest, the obstinate and the unenlightened might disappear; and a hardy and healthy stock of cool-brained and clear-thinking citizens might bring into exclusive possession and intenser energy the impulses which tend to human welfare.

We observe that no subject moves Professor Clifford to such uncontrollable excitement as the influence of a religious priesthood. In view of its past history, and in the immediate prospect of some terrible revival of its power, he at times almost loses his self-possession and his dignity. We can almost excuse him for the violence of his emotions at the thought of the enormities of abuse which a religious and even a Christian priesthood has often occasioned in the past. We see no occasion, however, for any dread of the immediate recurrence of such a debasing and cruel domination. Our apprehensions, we confess, take another direction. In our judgment, no priesthood of religion could possibly be so remorseless and so irresponsible as a priesthood of modern atheistic science, should it accept the ethical and sociological doctrines of the evolutionary ethics. The Christian priesthood, with all its craft and unscrupulousness, with all its fanaticism, and want of sentimentalism, could never wholly forget the gentle and humane precepts of the Gospels, and the example of its self-sacrificing High-priest. But a select scientific high-priesthood, which should adopt the theological ethics of Professor Clifford, would find nothing within itself to control its confidence in its own infallibility, or to limit the means or the inclination to execute its remorseless decrees.

The city of Paris has more than once been the witness of what each of these priesthoods could be and do. The massacre of St. Bartholomew's is often referred to as an example of what priestly fanaticism in religion could inspire. But, terrible as was this scene, it does not compare with those other spectacles of cruelty and horror in the same city which the priesthoods of atheistic, ethical, and political science have sanctioned if they have not inspired. As between the two we

should greatly prefer the domination of the Christian to the scientific hierarchy.

We should fail to do justice to Professor Clifford did we not distinctly refer to the paradoxical daring and passionate earnestness with which he has expressed his views on every point to which we have referred. His essay on the "Ethics of Religion" includes page after page of scathing denunciation of the baleful influences which religious priesthods have exercised upon every interest which can ennoble or bless the human race. At the close of the essay he relapses for a moment into a calmer mood. He bethinks himself of such "a comradeship with the Great Companion" as once fired his own youthful ardors, and still elevates and inspires the faith of Maurice and Kingsley and Martineau. But this relapse is but for a moment. Shaking off the spell, he concludes with this Titanic utterance: "For after such a helper of men, outside of humanity, the truth will not allow us to seek. The dim and shadowy outlines of the superhuman deity fade slowly away from before us; and, as the mist of his presence floats aside, we perceive with greater and greater clearness the shape of a yet grander and nobler figure, — of him who made all gods and shall unmake them. From the dawn of history and from the inmost depth of every soul the face of our father-man looks out upon us with the fire of eternal youth in his eyes, and says, 'Before Jehovah was, I am!'"

The essay on "Cosmic Emotion" gives us his theory of religious and ethical feeling, partly in the way of philosophic analysis, and partly in the tone of an Orphic hymn. The cosmos is contemplated in its double form, as the macrocosm of nature and the microcosm of souls. The first, by its mass and complexness, coupled with the experience of disappointment in the attempt to grasp

it as a whole, calls forth our veneration, resignation, and submission: the other presents the highest possible generalization of what we call good in character, and awakens the emotion of the second kind, such as is expressed by Wordsworth's "Ode to Duty." These two grand and closely related objects, when contemplated by the common eye, move us strongly; but when viewed by the armed eye of science, which connects them together in those intimate relations which unite matter and spirit, and, more than all, reads the history and destiny of each in the light of evolution, they kindle and sustain the most fervent worship, obedience, and hope. The cosmos has ever been growing and is ever to grow to our knowledge, which our wonder and worship can never overtake and master. Human nature has grown out of it; as what we call matter has been slowly evolved into life, and life has been transfigured into spirit. Spirit became capable of morality when the tribal self began to control the individual, and band-work began to be recognized as the supreme good. Moral goodness has been achieved as the social has new-moulded the individual. The morally better is another name for the necessarily more evolved. The morally evil are but the crude and rude impulses which have not yet been outgrown, the wildness of savage blood which has not yet been fully refined. Moral character is, indeed, every thing: the deed and wish are nothing in the comparison. But character is as truly formed by the laws of environment as are the forces of nature. "The social organism itself is but a part of the universal cosmos, and, like all else, is subject to the uniformity of nature. The production and distribution of wealth, the growth and effect of administrative machinery, the education of the race, these are cases of general laws which constitute the science of sociology. The discovery

of exact laws has only one purpose,—the guidance of conduct by means of them. . . . And the use which the republic must make of the laws of sociology is to rationally organize society for the training of the best citizens. Much patient practice of comradeship is necessary before society will be qualified to organize itself in accordance with reason. But those who can read the signs of the times, read in them that the kingdom of man is at hand.”

With these bold and significant utterances we conclude our laborious and protracted *résumé* of the creed of this extraordinary man. Many of our readers will agree with us, that he is in more than one sense of the term an *enfant terrible* in the scientific household. Not a few will be inclined to raise the question a second time, which we have already suggested, whether he represents any one but himself. Some will say that these extravagances of logic and of assertion are simply the legitimate though fiery outbreaks of a singularly headlong and impetuous nature, endowed with extraordinary gifts of concentration and exposition, whose youthful ardor had manifested itself in feats of gymnastic daring as foolhardy as are these specimens of high-flying reasoning and untamed declamation.

We cannot question that he was just the man he is described to have been. A single look at his portrait interprets him as endowed with a fearless, self-confident, and singularly good-humored, though defiant, nature. The history of his changes of opinion, the successive struggles of thought and feeling through which he fought his way from his High Churchmanship into the rampant atheism in which he died, are not given us by his over-dainty biographer. Such a history of his progressive change of opinions and their attendant emotions, as we have in the diaries and letters of Blanco

White or Theodore Parker, or Arthur Clough or John Sterling, would be most instructive in many most important particulars. All the light that we have upon these points is found in the two lines from his biographer which speak of "an intellectual and moral struggle," and the pathetic confession in which he says, "We have seen the spring sun shine out of an empty heaven to light up a soulless earth: we have felt with utter loneliness that the Great Companion is dead."

Our chief concern is not, however, with the man, much as he alternately fascinates and repels us, but with the question how far he represents the principles and methods of the various classes of evolutionists of the present day. In answer to this question, we observe, first, that Professor Clifford is not an agnostic. In this he apparently differs from Spencer and Tyndall, and all those who contend, that, while Science admits that there is an absolute, she affirms that he can never be so known by man as to be formulated in thought or phrased in words; that consequently a positive revelation, a scientific or philosophical faith, a rational worship, is impossible. As against these men, Clifford asserts, that at present Science finds not the slightest reason to believe there is any entity not finite, and that in all probability she will soon be able to demonstrate that no such being exists.

In this position Clifford is by no means alone among the negative thinkers. We have the best authority for asserting that many of the adherents of Mr. Spencer reject altogether, as wholly untenable and inconsistent, all his concessions which give form and being to agnosticism, and regard his very elaborate attempts to mediate between science and religion as irrational excrescences upon the philosophy of evolution.

In respect to the nature of the soul, its possible sur-

vival of the body, and the nature and authority of conscience, Professor Clifford holds the doctrines common to this school. He differs from his associates only in the more pointed and effective way in which he states the common creed, and the more fearless deduction of the logical conclusions to which it leads, and the more offensive phraseology in which he characterizes the opposite opinions. However uncomfortable and troublesome this *enfant terrible* may be in the household which he represents, he may render a very important service to those who are hesitating whether to attach themselves to that section which represents the agnostic and vacillating atheism of Spencer, or to the gnostic and positive atheism of Professor Clifford.

There is another eminently respectable and conservative section of scientists, who hold the conclusions of Professor Clifford in positive and outspoken abhorrence, and who are theists in their personal and scientific faith. They are evolutionists, *ex professo*; but they are neither materialistic nor atheistic evolutionists. They believe in the soul and in conscience, in a future life and a personal God, and many of them in a supernatural revelation. They find nothing in the teachings of science or the doctrine of evolution, as they hold it, which is inconsistent with their Christian faith or their theistic philosophy. Some few of them may be equally distinguished in science and theology.

Nothing could possibly be more unjust or odious than to intimate that the evolutionists of this school either sympathize or symbolize with the conclusions of Professor Clifford. It is, however, a fair question which we ask, and which every seeker after truth would do well to repeat, Whether and how far the logic of the two schools is common, and whether our professor is not sometimes the more consistent because the more fearless

logician of the two? This question is no question between science and theology, but one which is more profound and important; viz., What is scientifically true, and what methods of investigation may be trusted in interpreting the indications of nature so far as they unroll the mysterious history of the past, or warrant our confidence in the magnificent promises of the future?

The first question which we ask ourselves, when we open any work on these much-vexed questions, should not be what does the author believe, or attempt to prove, but *how does he reason?* — not what are his conclusions, but *what is his logic?* what are his views of the mind which interprets nature; what his views of the methods of studying nature; how far does he strain, and when does he limit, the analogies which bind nature and spirit into one system; and how quick is he to detect the differences which indicate the presence of nobler forces and higher laws? If in any application whatever he accepts the shallow logic and the hasty analogies of materialism, if he practically accepts those canons of induction which degrade knowledge to mere facilities of association, or the play and counter-play of brain mechanism, we care very little what his scientific creed may be, or, for that matter, what are his theological avowals. His heart may be better than his head, and yet he is responsible in the field of science only for the latter. His principal conclusions may be scientifically and theologically orthodox, while his methods of inquiry and many of his special opinions are thoroughly untenable and permanently mischievous.

We may be permitted to repeat with all frankness, that we have not designed to make a scarecrow of the extreme opinions of Professor Clifford, or to fasten them upon any who disavow them, but simply to call attention to the logic of his conclusions. We therefore

respectfully ask the attention of all our scientific friends to the inquiry, how far their logic is similar to his, — not so much in the final summing up of the subordinate arguments to their grand conclusions, but in more or fewer of the short and apparently easy steps which he takes from the inorganic to the living, from life to spirit, from spirit to conscience, and the skilful sleight-of-hand by which he substitutes an accessory for a principal relation, or confuses and mystifies himself and his readers by glittering but treacherous analogies. We would beg them to consider whether, even by accepting evolution as a “working hypothesis,” even in the origination of species, with the frank concession that not a single instance can be adduced of any well-known and thoroughly accredited species which has been produced by the actual “working” of evolution, they do not commit themselves to the merciless grasp of a logic from which it may not be easy to escape.

XII.

*HERBERT SPENCER'S THEORY OF SOCIOLOGY: A CRITICAL ESSAY.*¹

THE term *sociology* was invented and adopted in its French equivalent by Auguste Comte in his "Philosophie Positive." It makes its first appearance in the following sentence: "After Montesquieu, the next great addition to *sociology* (*which is the term I may be allowed to invent, to designate social physics*) was made by Condorcet proceeding on the views suggested by his illustrious friend Turgot" (b. vi. chap. ii.). The term *social physics*, also used by Comte as its equivalent, is significant; suggesting as it does the materialistic theory of man, which Comte takes no pains to conceal. For, according to his teachings, the higher nature of man is simply the result of a more highly organized brain; and the psychical and social phenomena of humanity depend solely on the quality and conditions of cerebral activity. On such a theory it is very clear that the science of the phenomena of man in society should, with the strictest propriety, be styled social physics.

So far as Comte's theory of science will allow, as being limited to the knowledge of phenomena and the relations of similarity and succession, — recognizing neither forces, causes, nor ends, — his treatment of this science is very temperate, and abounds in many just observations in respect to the operation of many of the agencies which affect man's social status and progress.

¹ The Princeton Review, September, 1880.

He recognizes very distinctly the extremely complex nature of the problems which are to be solved, and the difficulty of determining all the elements which enter into the several products, as also the relative importance of each. The single point of view from which he regards society is that of biology, and through this science he explains all the higher phenomena which pertain to man. He quotes with approbation the pregnant sentence of Pascal: "The entire succession of men through the whole course of ages must be regarded as one man, always living and incessantly learning." To this he adds, "The whole social evolution of the race must proceed in entire accordance with biological laws; and social phenomena must always be founded on the necessary invariableness of the human organism, the characteristics of which, physical, intellectual, and moral, are always to be essentially the same and related in the same manner, at every degree of the social scale, no development of them attendant upon the social condition ever altering their nature in the least, nor, of course, creating or destroying their nature in the least, nor, of course, creating or destroying any faculties whatever, or transposing their influence. No sociological view can therefore be admitted, at any stage of the science, or under any appearance of historical induction, that is contradictory to the known laws of human nature." And yet he insists that historical inductions are essential conditions to the progress and perfection of the deductions which can be derived from biology and cerebral psychology. To the elucidation of the science as thus conceived, Comte devotes full one-half of the bulky treatise which occupies five stout octavo volumes. It hardly need be said, that his stand-point is that of materialistic atheism. His tone is, however, thoroughly grave and scientific; and, abating the many

elaborately superfluous observations into which he is constantly betrayed, he shows careful and acute thinking upon many of the subjects which he passes in review, and leaves the reader with the feeling of profound respect for the earnestness of this plodding and laborious thinker, as also of regret for the narrow limits within which he confined himself by denying personality and freedom to both man and God.

John Stuart Mill devoted the last book of his treatise on Logic to the consideration of the logic of sociology. He adopts in general the views of Comte, as modified by his acceptance of the relations involved in causation and consciousness. These modifications could not be very considerable, however, so long as he denied freedom, and held to the necessity of human actions. Like Comte, he distinctly recognizes the limitations and difficulties of the science, and treats of these difficulties at length in the light of his own analysis of the Logic of Induction. He insists very justly, that though the science of man cannot enable us, like astronomy, to foresee and predict future sociological events with entire accuracy, it can yet with the greatest advantage acquaint us with the *tendencies* which enter into social phenomena, and so enable us in some measure to explain, to control, and direct them.

Herbert Spencer, though he is very largely indebted to Comte for many of his views, and especially in their application to sociology, has emphasized his dissent from him by superadding the doctrine of organic development, or growth after the analogy of a living being. He has accordingly modified his views of sociology by this addition. We propose to inquire with what success. Spencer's contributions to this science are professedly only introductory to its study. They are to consist of "The Principles of Sociology," in two

volumes; "Social Statics," and "The Study of Sociology," as also several volumes of "Descriptive Sociology," prepared under his direction, of materials for the comparative study of the customs and institutions of various tribes and nations of men at different periods of their history and at different stages of their progress.

The volume with which we shall chiefly concern ourselves is entitled "The Study of Sociology." In its external form and method it is obviously prepared for popular impression rather than for scientific conviction. The chapters are connected with one another by no very obvious relations of thought or association. The treatment of the topics in the several chapters is sensational rather than logical; and the offences against good taste and decency, so far as either require a respect for convictions which are held sacred by the great mass of Mr. Spencer's fellow-countrymen, are almost unparalleled in modern controversial literature. It is not easy to give any just conception of the treatise to one who has not read it; because its method is rambling, and the clew of logical connection is very frequently lost in the bewildering maze of examples and stories which are designed to serve as illustrations. The only practicable method of discovering the author's theory, is to subject the volume to a minute criticism. Even this promises only partial success.

One prominent feature characterizes this treatise from beginning to end, and that is, that the author assumes the truth of evolution as an axiom which not only ought to be accepted by all men who can rightfully claim to be considered men of science, but has, in fact, been already received by all who are now known as such. He seems to assert with nearly the same outspoken positiveness, that a theist, in the common acceptance of the word, cannot accept sociology in any

scientific sense of the term. We find the first of these positions distinctly announced in the first chapter, and the last stated in the concluding chapter. We ought to expect that each should be supported by some formal argumentation. Inasmuch as the book professes to be in some sense introductory to the study of this new science, which the author finds not yet perfected or even formulated, and is addressed to the popular ear all unaccustomed to the science, and ignorant of its meaning and its value, we should expect that a treatise with such a beginning and ending would be fortified by arguments and explanations touching these fundamental points. We have some reason for surprise, if not for complaint, when we find that its argumentation is occupied with the confirmation of the truth of evolution through its application to sociology, rather than with the illustration of sociology by means of evolution.

In the first chapter we find the following :—

“Now that the transformation and equivalence of forces is seen by men of science to hold, not only throughout all inorganic actions, but throughout all organic actions; now that even mental changes are recognized as the correlatives of cerebral changes, which also conform to this principle; and now that there must be admitted the corollary, that all actions going on in a society are measured by certain antecedent energies, which disappear in effecting them, while they themselves become actual or potential energies from which subsequent actions arise,—it is strange that there should not have arisen the consciousness that these highest phenomena are to be studied as lower phenomena have been studied, not, of course, after the same physical methods, but in conformity with the same principles. And yet scientific men rarely display such a consciousness.”

In the conclusion we find these utterances :—

“Such must be, in part, my defence for having set down many thoughts which the title of this work does not cover. Especially have I found myself obliged thus to transgress, by representing the

study of sociology as the study of evolution in its most complex form. It is clear, that to one who considers the facts societies exhibit as having had their origin in supernatural interpositions, or in the wills of individual ruling men, the study of these facts will have an aspect wholly unlike that which it has to one who contemplates them as generated by processes of growth and development continuing through centuries. Ignoring, as the first view tacitly does, that conformity to law, in the scientific sense of the word, which the second view tacitly asserts, there can be but little community between the methods of inquiry proper to them respectively. Continuous causation, which in the one case there is little or no tendency to trace, becomes, in the other case, the chief object of attention; whence it follows, that there must be formed wholly different ideas of the appropriate modes of investigation. A foregone conclusion respecting the nature of social phenomena is thus inevitably implied in any suggestions for the study of them."

The first of these extracts is under the title of "Our Need of Sociology," and was designed to illustrate the point, that men of science, who know that evolution is universally accepted as the only scientific theory of all phenomena, the spiritual and social included, have not yet accepted the necessary conclusion, that sociology can only be explained by this theory, and therefore need to be instructed in respect to these special applications. The considerations adduced in the second of these extracts would have led a moderately candid man to ask whether it were impossible to believe that human freedom and a superintending providence are consistent with the presence and agency of fixed forces or tendencies that conform to natural law. A person moderately acquainted with the course of human speculation respecting social phenomena, from the Book of Job onwards, would at least recognize the unquestioned fact, that both men and devils—if we are to credit Milton—had in every generation vexed themselves with inquiries how God could execute his decrees in the de-

velopments of human history, and yet man be free to promote or thwart them. That a theist or Christian had ever attempted to form a theory of sociology, and with some fair pretensions to reasonableness, seems never to have entered into the conception of this student of man, to whom the very term rational or scientific theology is an offence to his understanding, and the object of his ignorant and sometimes ill-mannered ridicule.

The evils adduced in the first chapter to prove the need of social science are pertinent enough, provided it were conceded that sociology is adequate to prevent or cure them. Mr. Spencer uses very just and true language concerning the necessity that character or the springs of action should be changed in order that conduct may be rectified. He almost agrees with those teachers whom he sneers at as Methodists in respect to the necessity of a new birth in man in order that society may be reformed. But, unfortunately, he holds with Robert Owen, that any inward change of character can be effected only by favorable social circumstances. In this particular many thinkers, who have meditated as profoundly as he upon the problems of sociology, do not agree with him, but agree with the Methodists.

The second chapter asks and seeks to answer the question, "Is there a Social Science?" In discussing this question, Mr. Spencer supposes that there are two classes of persons who must answer the question in the negative. The first believe "that phenomena that are greatly involved are supernaturally produced," conspicuous by the agency of great men; and the second contend that sociology cannot meet the requisitions for a science by reason of the element of human freedom. In illustrating the first, he holds up to ridicule the devout recognition of the agency of God on various

occasions of history ; and, in treating of the second, he attacks Mr. Froude and Mr. C. Kingsley for seeming to deny that a social science of free beings is possible. He forgets that what they intend is, that sociology cannot be an exact science ; that inasmuch, in the language of Mr. Mill, it has to do with tendencies only, its provisions and explanations can never reach beyond a certain degree of probability, and must always be uttered with more or less reservation. Indeed, Mr. Spencer, without knowing it, seems to furnish all the materials for this very answer to Mr. Froude and Kingsley in the concessions which he subsequently makes concerning the failures to gain certainty and completeness in our provisions and explanations of social phenomena, and without seeming to be aware that his argument is as truly at their service as it is at his own. The chapter abounds in sundry particularly splenetic passages, as when Mr. Spencer harps upon a theme which the reader of his graver works will recognize as having been previously treated under the title of "The Impiety of the Pious."

"The disguises which piety puts on are, indeed, not unfrequently suggestive of that which some would describe by a quite opposite name. To study the universe as it is manifested to us ; to ascertain by patient observation the order of the manifestations ; to discover that the manifestations are connected with one another after a regular way in time and space ; and, after repeated failures, to give up as futile the attempt to understand the power manifested, — is condemned as irreligious. And meanwhile the character of religious is claimed by those who figure to themselves a Creator moved by motives like their own, who conceive themselves as discovering his designs, and who even speak of him as though he laid plans to outwit the Devil !"

He seems also to wander a little from the question whether there is a social science in the following : —

"Just as that theory of the solar system which supposes the planets to have been launched into their orbits by the hand of the Almighty looks feasible so long as you do not insist on knowing exactly what is meant by the hand of the Almighty, and just as the special creation of plants and animals seems a tenable hypothesis until you try and picture to yourself definitely the process by which one of them is brought into existence; so the genesis of societies by the actions of great men may be comfortably believed so long as, resting in general notions, you do not ask for particulars."

The third chapter, "On the Nature of the Social Science," ought to be the most instructive of all, inasmuch as it should define and defend the conception of sociology which, after so much painstaking, we might suppose had been reached by Mr. Spencer. We turn the leaves with awakened interest, expecting on every page to find a statement of the improvements which he has made upon Comte and Mill, and especially of the illuminating light which has been poured upon it by the *prima philosophia* of evolution. We come to the last paragraph and the last line—and what have we found? Not a single either concise or expanded definition of the new social science—not even a sketch of the materials from which to frame a definition by either condensation or inference. All the chapter yields to us is a series of rambling remarks upon society as an organism, the import or intent of which is to illustrate the analogy between growth in the several forms of living beings, and growth in what we popularly call social organisms. Even these facts and observations are not so much designed to illustrate or prove that social phenomena are explained by the law of evolution as to show that social phenomena follow the laws of organic growth, and therefore prove the doctrine of evolution. Despairing of finding in the introductory volume an answer to our question, *What is sociology as conceived by Mr. Spencer?* we turn to the "Principles of Sociology,"

vol. i., being attracted by the promising table of contents of Part II., "The Inductions of Sociology." But after looking through all the chapters, and following the many illustrations gathered on the one hand from the lowest forms of living beings, and on the other from every description of social relations and progress, we are forced to conclude that the author is seeking to establish the universality of the doctrine of evolution by an accumulation of particulars from the two domains of life and society. We have in this an example of what we find everywhere in all his treatises. Whatever the subject-matter may be, they are all written to illustrate and confirm the law of evolution as everywhere present and controlling all phenomena.

Looking elsewhere for what we seek, we find the keynote of his system expressed by himself, in the words in which he explains the additions which he has made to what he learned from Comte: "And now let me point out that which really has exercised a profound influence on my course of thought. The truth which Harvey's embryological inquiries first dimly indicated, which was more clearly perceived by Wolff and Goethe, and which was put into a definite shape by Von Baer, — the truth that all organic development is a change from a state of homogeneity to a state of heterogeneity, — this it is from which very many of the conclusions which I now hold have indirectly resulted. There is also manifested the belief, that this evolution is in both cases determined by the coincidence of conditions, — the action of circumstances. And there is further in the sections above referred to a recognition of the fact, that organic and social evolutions conform to the same law."

This application of evolution seems to have wrought like new wine upon a head previously wonted to the

weak and watery mechanical philosophy of Comte. The product has been a degradation of the conceptions proper to the organic and the spiritual to a hybrid materialism, and the explanation of all the forms of human thought and feeling, as also of the phenomena of man, whether individual or social, by the attraction and repulsion of original molecules or star-dust. We know, indeed, that the state was conceived by Plato to be that spiritually organized unity which the potently working idea wrought out of crude matter after manifold struggling essays towards its own realization. In Aristotle we have a similar conception stated in more accurate and scientific language. But, according to Herbert Spencer, social organization is effected by the spontaneous elevation of material elements, and the adjustment of the relations of matter into structures as these are spontaneously and successively spiritualized, and made capable of the highest and noblest functions and relations.

This Chapter III., which proposes to define the nature of sociology, begins with what seem to be exact definitions, and proceeds with plausible analogies. The critic who follows it with a careful scrutiny is soon confounded by the dexterity with which the author plays fast and loose with his fundamental notions, and the ease with which he glides from one to another, borne up and onward by the flimsiest and most transparent of metaphors. For example, he starts with the true position, that the shape of the ultimate molecules in any mechanical combination determines the external form of the mass into which they are gathered. He observes next, that in chemical and many other, if not in all, purely physical adjustments, each combination has a form of crystallization, which is taken to determine its chemical or physical qualities. Here we have function

dependent on structure. He proceeds to observe, that in living matter the same is true ; for do we not see that the polyp and the begonia, when divided, grow again after the same form as the undivided parent ? “ Given, then, the nature of the units, and the nature of the aggregate they form is predetermined.” That may be ; but it does not follow that function, as well as shape, depends on structure. It is not on the chemical units as units which enter into water that its properties depend, but on their capacity to affect one another when brought into contact. It is not the relative position of the particles which enter into an iron bar that makes it weak or strong, but their mutual action upon one another in molecular relations. Let it be granted that the form of a pile of cannon-shot depends altogether on their relative position, it by no means follows that what is true of a pile of cannon-shot explains all that is true of the human brain and the human body, with the functions of life and thought and feeling. Mr. Spencer clears every one of these chasms with flying-leaps ; and, alighting upon that structure which we call society, he concludes, that, as in all lower forms of being the properties or functions depend on the arrangement of the units, so is it with that social structure of which the units are living and thinking men and women. He does, indeed, condescend to say in passing, “ Those who have been brought up in the belief that there is one law for the rest of the universe and another law for mankind will doubtless be astonished by the proposal to include aggregates of men in this generalization.” They are astonished, and with reason.

We submit, moreover, that such reasoning strictly construed overthrows the doctrine of evolution as a succession of processes of differentiation and integration. If “ the properties of the units determine the whole

they make up," then the aggregate equals the sum of the units; and its functions are expressed by the sum of their united force. Now, it is clear to us, that the aggregates called the human heart and the human liver and the human brain as organs with functions are something more than the sum of the units which compose them; and it ought to be equally clear to Mr. Spencer, that, if the doctrine of evolution is true, any lower structure of aggregates has the power to transform itself, that is, its own units, into structures which differ from itself in higher capacities and functions. That is, a unit with a given structure or mechanical disposition of molecules not only has the capacity for exercising the functions which this structure makes possible, but, by the aid of a new environment, of evolving another molecular structure with other functions.

Mr. Spencer barely saves himself from persisting in this oversight of his own essential principle of evolution, by introducing, almost by accident, two qualifying clauses, in which he represents social aggregates to be more than added units. "It" (social science) "has to explain how *slight modifications of individual nature*, arising under modified conditions of life; make somewhat larger aggregates possible;" and again, "It has to exhibit the stronger and more prolonged social influences, which, by *further modifying the characters of the units*, facilitate aggregation with further complexity of social structure."

It must be obvious to any one familiar with this kind of reasoning, that the words *structure*, *function*, *organs* and *organism*, *growth* and *development*, are capable of a great variety of significations; and these may be easily interchanged with one another by a confident and careless thinker. A well-known president of the great republic once made himself notorious by calling himself

“an old public functionary;” and it is no secret that another was willing to be any “organ” of the people, and boasted that he had been evolved through all the organs intermediate from an alderman up to a president by accident. In such connections these terms seem simple and unambiguous. But when we ask what there is in “the structure” of the commonwealth which produces the organ, or in the structure of “the organ” which enables it to fulfil successively all the varied functions from an alderman up to a president, the analogies begin to be uncertain. Moreover, when Comte contends that the highest conceivable perfection of the social structure, and that to which it tends by the law of progress, will be reached when “the individual life shall be subordinated in the greatest degree to the social life,” and when Spencer contends that this perfection will be realized under the law of evolution, “when social life will have no other end than to maintain the completest sphere for individual life,” we have reason to conclude that the so-called social organism of which the units are intelligent and free includes elements and relations which are very different from those concerned with the form of a pile of cannon-balls, or the shaping of a crystal, or even the determination of the functions of a living vegetable or animal. We repeat, that we find no objection to the terms *organism*, *growth*, *structure*, and *development*. But we find in them, when used in a science of sociology which concerns human beings, relations which are higher than any which mechanism implies. To our thinking, they suppose life and spirit, intelligence and personality, freedom and God, in the universe. For these very reasons we cannot consent that they should be turned to baser uses by any kind of philosophical *legerdemain*, or be employed to dignify and recommend a materialistic view of the forces which

control human society, or an atheistic theory of human progress.

We have said enough of the vagueness of Spencer's conception of structure and organization and growth when used to explain the nature of social science. In the subsequent part of this chapter he proceeds to "make more definite the conception of a social science" by laying down a few propositions respecting the relations of structure to organization and growth. They are like the following: "Take the general fact, that, along with social aggregation, there always goes some kind of organization." "A differentiation of the originally homogeneous mass of units into a co-ordinating part and a co-ordinated part is the indispensable initial step." "Along with evolution of societies in size there goes evolution of their co-ordinating centres, which, having become permanent, presently become more or less complex." "Men rise into the state of social aggregation on condition that they lapse into relations of inequality in respect of power, and are made to co-operate as a whole only by the agency of a structure securing obedience." "At a higher stage, the power of the chief being well established, he no longer supports himself."

The relation between structure and growth is also illustrated in order to show that great growth is impossible without a complicated structure, and conversely that a complex structure tends to arrest growth, as is seen in appliances for locomotion, drainage, trade, and education, the organs of which, like those of an animal body, first facilitate and then hinder growth. These positions are doubtless designed to shed further light on the nature of sociology as a science, but they all assume the position which has never yet been proved; viz., that these fundamental conceptions have the same import in

the so-called mechanical, vital, and social organisms. Upon this much-questioned point the entire chapter throws not a ray of light, however; and we are consequently left as much in the dark at the end as we found ourselves at the beginning.

The scientific student who requires clear and justified conceptions to begin with might be tempted to close the book in utter disgust and despair, did he not find in Chapter XIV. some ground for hope that it would furnish the needed light as to what sociology is. This chapter is entitled "Preparation in Biology," and purports to show how the scientific study of life is a preparation for the scientific study of society. Here, perhaps, the clew may be found which shall explain how the animal is related to the social organism. Early in this chapter the author rises to the doctrine of the development of organisms one from another, and asserts that this is essential to sociology in its complete and highest achievement. He remarks of Comte, —

"Nor did he arrive at that conception of the social science which alone fully affiliates it upon the simpler sciences, — the conception of it as an account of the most complex forms of that continuous redistribution of matter and motion which is going on universally. Only when it is seen that the transformations passed through during the growth, maturity, and decay of a society conform to the same principles as do the transformations passed through by aggregates of all orders, inorganic and organic; only when it is seen that the process is in all cases similarly determined by forces, and is not scientifically interpreted until it is expressed in terms of those forces, — only then is there reached the conception of sociology as a science, in the complete meaning of the word."

After this he proceeds to show the relation of the two sciences: —

"There are two distinct and equally important ways in which these sciences are connected. In the first place, all social actions being determined by the actions of individuals, and all actions of

individuals being vital actions that conform to the laws of life at large, a rational interpretation of social actions implies knowledge of the laws of life. In the second place, a society as a whole, considered apart from its living units, presents phenomena of growth, structure, and function, like those of growth, structure, and function in an individual body; and these last are needful keys to the first."

Taking the second of these positions first, on which the reader will observe the whole question turns, he seeks to show that society, apart from its being composed of living units, is analogous to a living organism; and that the resemblances are more than metaphorical. The parts are mutually dependent: they are diverse in structure, also in function; and each by its function supplies what the other lacks. These organs communicate with one another, they combine with one another, they exchange with one another, they are dominated by a leading organ: all of which is true, but leaves the question still unanswered, whether or not the higher organisms, because of their points of similarity, may be held to be evolved from one another, or whether the operations of the higher can be explained by the laws of the lower; i.e., whether life does not possess properties which inorganic relations can neither attain to nor account for, and whether social organisms in their turn are not the products of special social propensities and forces. These questions the author does not raise, and certainly does not answer them, but leaves us at the end, as when he met us at the beginning, with the assertion, that the doctrine of development in the two alternate processes of differentiation and integration accounts for all kinds of institutions, as also for every order of existing beings and phenomena.

It is characteristic of the author, that, having finished what he has to say of biology as a preparation for

sociology, he rushes into a long, haranguing discourse on the impolicy of state patronage, interference, and assistance, in respect to the public health, calamities, poverty, education, beyond those limits which biology would dictate when it has established its inductions. It is a small consolation to be told, that in the mean time sociology must wait, and for a long time, till biology has reached and vindicated its own inductions, when sociology may borrow and apply them.

Thus far we have followed Spencer's exposition of the science, which, in a sense, he claims to have first adequately conceived. This exposition occupies only a small portion of the volume, — at the most but two or three chapters. The remaining chapters, are, however, even more significant. They consist of an exposition of the difficulties which stand in the way of the mastery of this science by its leaders, and of its reception by their disciples. Mr. Spencer does not profess to have himself mastered these details. He has only discovered that such a science may be constructed. He has not entered the promised land. He has only seen it from Pisgah, and marked out its boundaries, and assured his followers that it invites to conquest and possession. Meanwhile the difficulties which stand in the way are manifold and almost insuperable. It would seem that centuries must elapse before these can be set aside and overcome. These difficulties are divided into three, roughly classed as objective and subjective *plus* several distinctive biases. The examples of these difficulties are of a very varied character, and are drawn from the author's abundant reading, and from events and statements of a very piquant and striking, not to say sensational and startling, character. Many of them are offensive to the taste. Not a few of them are indecent in their suggestions, and are positively flippant, if not blasphemous, in

their treatment of sacred objects, and the feelings of those to whom they are sacred. Many of them, on the other hand, are interesting and striking, even when they do not seem to be pertinent or convincing. Very few of them, however, are fitted to strengthen respect for the sagacity of political leaders or reformers, of moralists or statesmen, or for the honesty or competency of Christian teachers, or for the intelligence or benevolence of Christian nations. The world, according to Mr. Spencer, is in a very bad way, literally perishing for the lack of sociology; and the difficulties are manifold and insuperable in the way of its deliverance. In illustration of a single so-called objective arising from a subjective difficulty in the way of gaining a misjudgment of a fact, the author devotes seven pages (84-90) to the exhibition of the evidence that an entirely "false state of facts" had been accepted by the English public concerning the very rapid spread of the venereal disease as a motive to active public interference by statute for its repression. In illustration of the tendency to mingle inferences very largely with observation, he notices the unfounded conclusions which had been derived from statistics concerning the relative mortality of married and single persons. The objective difficulties in which no subjective modifications are blended are the vast spaces from which the facts must be gathered and generalized, the enormous length of time along which their succession is to be traced, both of which are forcibly illustrated. From the author's discussion of many of these topics valuable results may be derived.

The subjective difficulties proper begin in the sixth chapter, with those which are "Intellectual." The author begins with a lively story of a mother who impatiently scolds her child in a railway-car, because it displays a restless curiosity which the mother has out-

grown, and cites this to illustrate the anthropomorphic tendency to judge the operations of others' minds by our own. This is a very formidable obstacle in the way of our judging of the condition of the communities unlike ourselves in which we propose to effect changes by sociological appliances. The error here is twofold, — the belief, on the one hand, that man is the same in all times, and the belief, on the other, that human nature may be readily altered. The double belief which at once reconciles and corrects the two extremes, and which is essential to a sound sociology, is "the belief that human nature is indefinitely modifiable, but that no modification of it can be brought about rapidly." No sound social or political philosopher can object to this principle within certain limits. But as held by Mr. Spencer, as the logical outcome of the doctrine of evolution, it means that every thing which we call human nature, in its holiest and most refined judgments and feelings, is the product of circumstances. Consequently the sacred and the profane, the decent and the gross, the decorous and the lewd, are the creatures of environment and association. Several of the stories told in this chapter to illustrate the want of plasticity in the conceptions of men are sufficiently indecent to exemplify the superior plasticity of Mr. Spencer's own conceptions of what is decorous in a writer for the present decade. We quote one of the least objectionable : —

"That monogamy is not the only kind of marriage, we are early taught by our Bible-lessons. But, though the conception of polygamy is thus made somewhat familiar, it does not occur to us that polyandry is also a possible arrangement; and we are surprised on first learning that it exists, and was once extremely general. When we contemplate these marital institutions unlike our own, we cannot at first imagine that they are practised with a sense of propriety like that with which we practise ours. Yet Livingstone narrates, that, in a tribe bordering one of the Central-African lakes, the

women were quite disgusted on hearing that in England a man has only one wife. This is a feeling by no means peculiar to them."

In order still further to exemplify the want of plasticity which enables us "to see ourselves as others see us," he gives six pages (139-144) to an observer in the far future of the English people of to-day as they might be interpreted by records and fossil and other remains. Of this we quote the following :—

"This mention of their missionary enterprises introduces other remarkable anomalies. Being anxious to get adherents to this creed, which they adopted in name, but not in fact, they sent out men to various parts of the world to propagate it,—one part, among others, being that subjugated territory above named. There the English missionaries taught the gentle precepts of their faith, and there the officers employed by their government exemplified these precepts: one of the exemplifications being, that, to put down a riotous sect, they took fifty out of sixty-six who had surrendered, and, without any trial, blew them from the guns, as they called it, — tied them to the mouths of cannon, and shattered their bodies to pieces. And then, curiously enough, having thus taught and thus exemplified their religion, they expressed great surprise at the fact, that the only converts their missionaries could obtain among these people were hypocrites, and men of character so bad that no one would employ them."

Of the bearing of seven-eighths of this chapter on sociology it would be difficult to find any evidence.

Passing over the seventh chapter, we come to the eighth, on the "Educational Bias," which exhibits the theory of ethics as held by the author to be at once as shallow and as false as could easily be conceived, and by consequence to imply a theory of social progress which is equally defective. It opens with the following :—

"It would clear up our ideas about many things, if we distinctly recognized the truth, that we have two religions. Primitive humanity has but one. The humanity of the remote future will

have but one. The two are opposed, and we who live midway in the course of civilization have to believe in both. These two religions are adapted to two conflicting sets of social requirements."

"On the one hand, there must be social self-preservation in face of external enemies. On the other hand, there must be co-operation among fellow-citizens, which can exist only in proportion as fair dealing of man with man creates mutual trust. . . . In adjustment of these two conflicting requirements, there grow up two conflicting codes of duty, which severally acquire supernatural sanctions. And thus we get the two co-existing religions, — the religion of enmity and the religion of amity."

"The religion of enmity nearly all men actually believe. The religion of amity most of them merely believe they believe."

"From the books of the Jewish New Testament we take our religion of amity. Greek and Latin epics and histories serve as gospels for our religion of enmity. . . . The nobility of self-sacrifice, set forth in Scripture-lessons and dwelt on in sermons, is made conspicuous every seventh day; while, during the other six days, the nobility of sacrificing others is exhibited in glowing words."

The alleged incompatibility between the two creeds is illustrated by an incompatibility alleged to be equally extreme confessed between the Christian faith and the scientific physics of Faraday: —

"A late distinguished physicist, whose science and religion seemed to his friends irreconcilable, retained both for the reason that he deliberately refused to compare the propositions of the one with those of the other. To speak in metaphor, when he entered his oratory, he shut the door of his laboratory; and, when he entered his laboratory, he shut the door of his oratory. It is because they habitually do something similar, that men live so contentedly under this logically indefensible compromise between their two creeds."

"The religion of amity and the religion of enmity, with the emotions they respectively enlist, are important factors in sociological conclusions; and rational sociological conclusions can be produced only when both sets of factors come into play. We have to look at each cluster of social facts as a phase in a continuous metamorphosis. We have to look at the conflicting religious beliefs and

feelings included in this cluster of facts as elements in this phase. We have to do more. We have to consider as transitional, also, the conflicting religious beliefs and feelings in which we are brought up, and which distort our views, not only of passing phenomena in our own society, but also of phenomena in other societies and in other times; and the aberrations they cause in our inferences have to be sought for and rectified. Of these two religions taught us, we must constantly remember, that during civilization the religion of enmity is slowly losing strength, while the religion of amity is slowly gaining strength. We must bear in mind, that at each stage a certain ratio between them has to be maintained. We must infer that the existing ratio is only a temporary one, and that the resulting bias to this or that conviction respecting social affairs is temporary."

The author's theory of ethics is this: Every act and feeling which terminates in ourselves is essentially incompatible with every act and feeling which benefits another. In other words, a man cannot in any sense love himself or care for himself without hating his neighbor. Moreover, every act of injury to another, whatever be the occasion or the motive, is of necessity dictated by the spirit of enmity. To act for the welfare of ourselves is incompatible with the exercise of a feeling or activity which may benefit others. Every act of self-concern or self-defence or aggression in any form of war is dictated by hatred to others. The two tendencies are, however, necessary in man's at present imperfect state. They must continue in inevitable antagonism until society is so modified that the interests of others shall necessarily coincide with our own. When the social forces are re-adjusted, every man must promote his own welfare through every act which promotes that of others. Then and not till then will society attain the perfection to which sociology tends to conduct it. The theory of morals outlined in this volume is more fully expanded in the "*Data of Ethics*."

His interpretation of the religion of enmity as taught and accepted by Christendom is singularly paradoxical. That men ought to hate their enemies, or that it is in itself noble to sacrifice them, no man teaches and no man believes. What is extolled in war are skill and courage and self-sacrifice, and chiefly because of their heroic, unselfish aspects, but never the spirit of hate and murder. It may be that men from selfish impulses often devise pretexts for needless and cruel wars. But the pretexts and excuses which they plead are uniformly in reasons of benevolence and virtue and justice. To reason, because men *act* against their convictions and their religions, and in so doing seek for flimsy pretexts to excuse or defend these acts, that therefore they must believe their actions right, or because under the present imperfect state of society men must necessarily practise "the religion of enmity," that therefore their actions are not wrong, is to fall into fallacies which have been refuted often enough not to need to be refuted again. All these fallacies are accepted and reiterated by the author.

The religion or ethics of unqualified altruism is assumed to be the Christian law, and this is conceived to be as extreme and one-sided as the religion of unqualified egoism. "Against the doctrine of entire selfishness it sets the doctrine of entire self-sacrifice." "In place of the aboriginal creed not requiring you to love your fellow-man at all, . . . there came a creed directing . . . that you shall love him as yourself. Nineteen centuries have since wrought some compromise between these opposite creeds. It has never been rational, however, but only empirical, — mainly, indeed, unconscious compromise. There is not yet a distinct recognition of what truth each extreme stands for, and a perception that the two truths must be co-ordinated."

If Mr. Spencer's theory is to be taken as the last and best interpretation of the Christian ethics, we certainly give our assent to this statement. There are not a few well-taught Sunday-school children, however, who have a more enlightened theory of the Christian law of duty than Spencer finds in the New Testament.

The remainder and much the larger portion of this chapter on the "Educational Bias" is devoted to the illustration of the overweening influence of the military spirit, and the excessive homage which is paid to the military virtues and to military heroes, ostensibly for the purpose of exemplifying the operation of the religion of enmity. Both lines of argument are made to converge in the dreary conclusion, that, till society is perfected, we must do the best we can, and let the pendulum vibrate hither and there between the religions of amity and enmity, till the equilibrium shall be attained in that perfectly balanced society which sociology contemplates as its ideal, — but, so far as we can see, helps us very little towards making a reality.

The "Bias of Patriotism" is discussed in the ninth chapter, in which the author gives us much lively and piquant writing in illustration of the over-estimate of their country and its doings by the French and Germans respectively. This is followed by a very long series of comments on anti-patriotism as exemplified by Mr. Matthew Arnold in his over-appreciation of the French as contrasted with the English in many lines of science and culture. The bearing of this very lively chapter upon sociology is very remote.

The "Class Bias" and the "Political Bias" fill the two chapters following, in which there is nothing special to notice save the remoteness of the positions taken and the facts adduced from any very significant or direct application to sociology.

The twelfth chapter, which follows, on the "Theological Bias," has attracted special public attention, rather on account of its offensive and contemptuous illustrations than because of any novelty in the opinions expressed. Similar opinions are freely asserted in Spencer's other works. His rejection of any possible divine communication of truth to man, or the manifestation of any divine or supernatural personality, is distinctly avowed in his graver treatises. His position that agnosticism is the only creed which an enlightened philosopher can hold in respect to the Infinite and Self-Existent, in which he acknowledges we must believe, and the kindred doctrine that every form of theological truth must necessarily be temporary in its duration, and every form of positive faith must give way before progressive scientific illumination, has been distinctly avowed and carefully defended elsewhere. The re-assertion of these doctrines in this volume was to be expected, and ought not to bring any special reprobation. That which distinguishes this volume is the open expression of sarcastic contempt by illustrations and comparisons, which remind us forcibly of Voltaire and Paine, for both of whom manifold excuses might be found which Spencer cannot plead. The fact that these examples are but few does not furnish any sufficient defence of those which do occur. We cite one or two of the least offensive. After copying from a traveller a horrid recital of the cannibalism of the Fijians in imitation and honor of their gods, Mr. Spencer proceeds to say, —

"Such being the account of the Samoans, and such the account of the Fijians, let us ask what the Fijians think of the Samoans. 'The Fijians looked upon the Samoans with horror, because they had no religion, no belief in any such deities [as the Fijian], nor any of the sanguinary rites which prevailed in other islands,' — a statement quite in harmony with that made by Jackson, who, hav-

ing behaved disrespectfully to one of their gods, was angrily called by them 'the white infidel.'

"Any one may read, while running, the lesson conveyed, and, without stopping to consider much, may see its application to the beliefs and sentiments of civilized races. The ferocious Fijian doubtless thinks, that to devour a human victim in the name of one of his cannibal gods is a meritorious act; while he thinks that his Samoan neighbor, who makes no sacrifice to these cannibal gods, but is just and kind to his fellows, thereby shows that meanness goes along with his shocking irreligion. Construing the facts in this way, the Fijian can form no rational conception of Samoan society. With vices and virtues interchanged in conformity with his creed, the benefits of certain social arrangements, if he thinks about them at all, must seem evils, and the evils benefits.

"Speaking generally, then, each system of dogmatic theology, with the sentiments that gather round it, becomes an impediment in the way of social science. The sympathies drawn out towards one creed, and the correlative antipathies aroused by other creeds, distort the interpretations of all the associated facts."

He argues further, what is true of a general is also true of a special theological bias:—

"Everywhere, indeed, the special theological bias accompanying a special set of doctrines inevitably prejudges many sociological questions. One who holds a creed as absolutely true, and who by implication holds the multitudinous other creeds to be absolutely false in so far as they differ from his own, cannot entertain the supposition that the value of a creed is relative. That a particular religious system is, in a general sense, a natural part of the particular society in which it is found, is an entirely alien conception, and, indeed, a repugnant one. His system of dogmatic theology he thinks good for all places and all times. . . . Thus preposessed, he passes over the proofs found everywhere, that a people is no more capable of suddenly receiving a higher form of religion than it is capable of suddenly receiving a higher form of government; and that inevitably with such religion as with such government, there will go on a degradation which presently reduces it to one differing but nominally from its predecessor. In other words, his special theological bias blinds him to an important class of sociological truths."

Designing to be impartial, he turns to the antitheological bias; and, after giving instances of antitheistic iconoclasm from heathendom and Christendom, he proceeds, with that charming candor which he occasionally affects, to show, that, inasmuch as motives addressed to the reason have comparatively little influence upon the conduct and characters of men in comparison with what addresses their feelings, therefore superstitious and positive religions will be an inevitable necessity for long æons before that millennium when sociological truth shall shine by its own light and warm from its own fires. He concludes by repeating what is very familiar to the reader of his other writings, his confession of faith. Of the object of religious faith he says, —

“The process of evolution, which has gradually modified and advanced men’s conceptions of the universe, will continue to modify and advance them during the future. The ideas of cause and origin, which have been slowly changing, will change still further. But no changes in them, even when pushed to the extreme, will expel them from consciousness; and hence there can never be an extinction of the correlative sentiments. No more in this than in other things, will evolution alter its general direction: it will continue along the same lines as hitherto. And, if we wish to see whither it tends, we have to observe how there has been thus far a decreasing concreteness of the consciousness to which the religious sentiment is related, to infer that hereafter this concreteness will further diminish; leaving behind a substance of consciousness for which there is no adequate form, but which is none the less persistent and powerful.”

Religion subjectively viewed, or the religious sentiment, is thus characterized: —

“Without seeming so, the development of religious sentiment has been continuous from the beginning; and its nature when a germ was the same as is its nature when fully developed. The savage first shows it in the feeling excited by a display of power in another exceeding his own power, — some skill, some sagacity, in

his chief, leading to a result he does not understand, — something which has the element of mystery and arouses his wonder. . . . The hypothesis of atoms and molecules enables them to work out multitudinous interpretations that are verified by experiment, but the ultimate unit of matter admits of no consistent conception. Instead of the particular mysteries presented by those actions of matter they have explained, there rises into prominence the mystery which matter universally presents, and which proves to be absolute. So that, beginning with the germinal idea of mystery, which the savage gets from a display of power in another transcending his own, and the germinal sentiment of awe accompanying it, the progress is towards an ultimate recognition of a mystery behind every act and appearance, and a transfer of the awe from something special and occasional to something universal and unceasing.”

From atheism, or the religion of humanity, he expresses his dissent as follows : —

“No one need expect, then, that the religious consciousness will die away, or will change the lines of its evolution. . . . That the object-matter can be replaced by another object-matter, as supposed by those who think the ‘Religion of Humanity’ will be the religion of the future, is a belief countenanced neither by induction nor by deduction. However dominant may become the moral sentiment enlisted on behalf of humanity, it can never exclude the sentiment, alone properly called religious, awakened by that which is behind humanity, and behind all other things.”

The summary of the Spencerian or agnostic creed is forcibly stated in the following lines by another writer : —

“At the end of every road there stands a wall,
Not built by hands, — impenetrable, bare.
Behind it lies an unknown land. And all
The paths men plod tend to it, and end there.

Each man, according to his humor, paints
On that bare wall strange landscapes, dark or bright,
Peopled with forms of fiends or forms of saints,
Hells of Despair or Edens of Delight.

Then to his fellows, 'Tremble!' or 'Rejoice!'
The limner cries, 'for, lo! the Land beyond!'
And ever, acquiescent to his voice,
Faint echoes from that painted wall respond.

But now and then, with sacrilegious hand,
Some one wipes off those painted landscapes all,
Muttering, 'O fools, and slow to understand,
Behold your bourn, — the impenetrable wall!'

Whereat an eager, angered crowd exclaims,
'Better than yon dead wall, though pale and faint,
Our faded Edens! Better fiends and flames
By Fancy painted in her coarsest paint

'On the blind, bald, unquestionable face
Of that obstruction, than its cold, unclad,
Uncallous emptiness, without a trace
Of any prospect, either good or bad.'

And straightway the old work begins again
Of picture-painting. And men shout, and call
For response to their pleasure or their pain,
Getting back echoes from that painted wall."

Of this chapter on the "Theological Bias" we have only to say, as of many passages scattered through the volume, that it is difficult to determine whether it gives more decided evidence of *ignorance*, *narrowness*, *conceit*, or *virulence*. The writer seems to be *ignorant* of the fact, that very many Christian theologians and writers have commented as severely as he has done upon the impotence of a right intellectual belief separated from a sympathizing and man-loving ethics, and that the New Testament itself overflows at every pore with this vitalizing truth. He is not excusably ignorant, however; for his contempt of Christian theology and ethics, and the philosophy which both suppose, is too frequently and broadly expressed to be capable of being referred to any other category than what he styles "the religion

of enmity " and scorn. That this contemptuous or affected ignorance is *narrow* is evident from the fact, that in not a single passage of all his works is there any warm or appreciating sympathy with the progress of the peculiarly Christian emotions or Christian virtue or Christian civilization ; still further from the fact, that though in some of his later works, and notably in the fifteenth chapter of this book, he has laid special stress on the emotions as the great force by which man is to be elevated, and has recognized religion in some form as a perpetual necessity to man, he has rarely, if ever, suffered to escape him a word of fervent admiration for the ideal of life which Christianity has held aloft before so many generations to elevate their aspirations and subdue their passions, nor for the Christ whose inspiring force, whether he be real or ideal, has been gratefully and admiringly acknowledged by all magnanimous souls who have studied the comparative history of the religions of mankind. That his narrowness springs from *conceit* is evident from the supercilious disdain with which he passes over all the cosmogonies of the men who have sought to construct a theory of the world's development on the basis of human freedom and responsibility, and treats with special slight those Christian theists who have accounted for the order of the world's arrangement by the fiat of the Creating will, and the evolution of the world's history from nature to man by the continuous unity of the Creator's plan and purpose. His conceit is abundantly manifest in his confident statements concerning the opinions of men of whom he has only second-hand knowledge, and the assurance with which he criticises opinions and systems which he very imperfectly appreciates.

Were this volume open to no special objection on intellectual grounds for its want of clearness and method,

its intellectual temper, if we may use such a phrase, lays it open to the severest criticism. If Socrates was right in insisting that candor and docility and caution and self-distrust and patience and charity are the prime conditions for success in philosophy, especially for beginners, then a treatise which exemplifies so offensively the opposites of these virtues must be almost the worst possible introduction to a science, which, in the judgment of its professed master-builders, is as yet in its rudimentary condition.

We cannot withhold the remark in this connection, that great as are the evils to which the indiscriminating devotees of Spencer are exposed in the weakening of their traditional faith in Christian theism and Christian ethics, and much as these are to be deplored, these evils are, in our view, by no means so serious as the danger of surrendering their intellectual and moral being to sophistical and shallow methods of inquiry. A man may lose his faith for a while, or be tossed for a longer or shorter season upon a sea of doubt. His old belief he may recover again, and hold it the more strongly and value it the more highly for the labor which it has cost him to regain it, and the renewed joy with which he has recovered his prize. But if the man has yielded his intellect to false methods of inquiry, and sold himself to sophistical ways of judgment and shallow and unworthy reasons for his belief, he can rarely recover from the fatal lesion to his intellectual and moral nature. So far as we have observed, converts to the Spencerian philosophy are not recruited in the legitimate method of beginning with their author's theory of knowledge and a careful scrutiny of his "First Principles." Those who begin at this point rarely desire to go farther. They find so much to question and reject, — the logic is so incoherent, the definitions are so vacillating, and the

inductions so venturesome,—that they neither desire nor dare to follow so untrustworthy a leader. The men whom he usually attracts are those who begin with a specialty, either in politics or physiology or history, who, being little versed in philosophy, are prepared in their days of ambitious and manifold reading to accept with an easy faith almost any splendid generalizations which will stimulate the imagination and satisfy rapid and daring hypotheses. Were every student of this new school compelled to begin with Spencer's "Principles of Psychology" and his "First Principles," and were both of these works provided with a thorough and exhaustive index which would compel the reader to compare every term and definition as used in every place, there would, in our opinion, be very little change in the study of this greatly dreaded philosophy in any of its applications. To study it after a proper method, with a mind competently trained after the rigid and honest ways of definition and reasoning, would inevitably be to reject it. If its evolutionary and agnostic assumptions were seen to be invalid, the special applications to ethics and sociology would of necessity lapse. We believe that most of the currency and plausibility which Spencer's materialistic evolutionism and his antitheistic agnosticism have gained with his confiding and admiring disciples has been reflected back from the imposing array of facts and instances which he has marshalled from his enormous reading, and the brilliant hierarchies of his generalization. It is beyond all question, that he has devised the most comprehensive and shortest way of answering many questions that has recently been invented, and therefore is admirably fitted to addle the weak and empty-headed, and even to intoxicate heads which are strong and self-confident.

We are tempted to notice one or two remarks in the

concluding chapter. In reviewing the biases and difficulties in the way of a completed and triumphant sociology, the author is led to ask what is to be expected from this long discussion in the way of removing these difficulties. The answer which he gives reminds us of the comment of the Prince in "Rasselas," who, after hearing the disquisition of Imlac on poetry, exclaims, "Enough! thou hast convinced me that no human being can ever be a poet." Similarly Mr. Spencer asks a series of questions beginning with the following: "What is to be hoped from such a presentation of difficulties, and such a programme of preparatory studies?" "Who will think it needful to fit himself by inquiries so various and extensive?" He answers thus: "To these questions there can be but the obvious reply, — a reply which the foregoing chapters themselves involve, — *that very little is to be expected.*" And the reason given as the outcome of his discussions is, that, according to the law of evolution, the feelings and thoughts of every man, which include the desires and science of every man, being the product of his age, cannot rise very greatly above it. The practical conclusion is, Do not greatly disturb yourself about reform or human progress in yourself or others, neither about private morals nor public institutions. You cannot make over the world or yourself any faster than at a certain pace; and though it is well to gain as much sociology and apply as much sociology as you can, yet the world will be sociologically reformed at a very slow rate. This small ending of this magnificent beginning, when briefly stated, is this: Take the world easily, gain what light you can, and apply what reforms you may.

"Thus admitting, that for the fanatic some wild anticipation is needful as a stimulus, and recognizing the usefulness of his delusion as adapted to his particular nature and his particular function,

the man of higher type must be content with greatly moderated expectations, while he perseveres with undiminished efforts. He has to see how comparatively little can be done, and yet to find it worth while to do that little: so uniting philanthropic energy with philosophic calm."

We observe also, that, in this concluding chapter, Mr. Spencer turns with a half-pathetic, half-contemptuous allusion to men with whom, like Mr. Gladstone, "the belief in divine interposition goes along with, and by no means excludes, the belief in a natural production of effects on society by natural agencies set to work." Any compatibility of the two agencies is, in Mr. Spencer's view, wholly illogical; and he dismisses the suggestion with a contemptuous allusion to the resort to prayer in the case of the illness of the Prince of Wales, on occasion of whose recovery "providential aid and natural causation were unitedly recognized by a thanksgiving to God and a baronetcy to the doctor."

And so he ends this long discussion with the assumption with which he begins, that in social phenomena we can only recognize natural causation; because, forsooth, if sociology is a science, it can admit no other agencies. It was also assumed, that within the domain of natural law no other theory than that of evolution could for a moment be possibly admitted by any one who can claim to be scientific. These assumptions involve a theory of sociology, which, to all intents and purposes, is substantially atheistic. There are many who believe, that, bad as atheism may be in physics, it is immeasurably more to be dreaded in political and social science.

Moreover, as the result of this protracted discussion of the difficulties which lie in the way of this science, Mr. Spencer has brought us to the conclusion that the progress must necessarily be very slow, the determina-

tion of the forces and laws being independently delayed by their complexity; and at the end we are left with little more than a general faith in the progressive evolution of sagacity in the student, and of phenomena in society itself. From these facts and conclusions of the author, the theist would be led to the following meditation, with which we conclude our criticism.

We wonder that the thought has never occurred to Mr. Spencer, that possibly those relations in the universe which are supreme and controlling are such as, in common speech, men call personal and moral; that a self-existent person and created persons, under moral law, and acting for moral ends, are no inconceivable or self-contradictory conceptions; that a universe controlled by such relations is as dignified and as philosophical a universe as one which depends on moving star-dust for its beginning and its explanation, and which ends in a brilliant explosion as its *finale*; that a personal being who creates, sustains, and evolves a plan of progress and development for matter and spirit may possibly subordinate fixed causation to moral purposes without necessarily setting aside scientific law. We might even venture to suggest, that, in a book which cannot have been entirely overlooked in Mr. Spencer's manifold reading, the doctrine of evolution with such elements and such agencies is clearly taught, and analogies from physiological processes are as freely applied to illustrate the progress of the kingdom of heaven and of God as they are by Mr. Spencer himself. We might suggest in conclusion, that with such a philosophy,—the philosophy of Christian theism,—sociology may possibly become a far simpler science than is possible on the theory that the known and the knower are mutually dependent for what they are to be, and for what they are to know, on the molecules from which each is supposed

to have been evolved. Moreover, the clew to a perfect society is not left wholly nor mainly to the slow deductions of human experience, and the bitter lessons of human sorrow. It is provided for in the law of love, which, were it perfectly obeyed, would be quick to interpret and prompt to regard the teachings, and apply the lessons, which human experience must gather from social observation and experiment. The province of sociology in the service of Christian faith is, indeed, comparatively simple; for in all its inductions it is guided by faith in the guidance of an instructing Providence, and in the inspiration of the living God. The student of sociology need never find himself half-stranded between the two seas of "philanthropic energy" and "philosophic calm." He would not need to school himself to sneer at self-sacrificing love and self-denying labor and forgiving patience as weak sentimentalities, which science must disown and despise, but would find in the very exercise and experience of the sentiments of love and patience and hope the assurance that they may be safely followed because they are certain to triumph. He would also find the amplest reason to believe, that in the kingdom of God, which God is even now developing on the earth by natural forces under supernatural guidance, the perfect society will be at last real on the earth; and the science of sociology will be illustrated in a living example when "the tabernacle of God shall be with men, and he will dwell with them, and they shall be his people, and God himself shall be with them and be their God."

XIII.

*THE KANTIAN CENTENNIAL.*¹

It is not easy to overestimate or to overstate the significance of the publication in 1781 of Kant's "*Critique of Pure Reason*." It is in no partisan or fanatical spirit that the student of philosophy and of human progress observes the centennial year of 1881 in commemoration of this event, by reviewing the significant changes in human thinking and human institutions — in philosophy and science, in literature and art, in ethics and theology — which may be properly referred to Kant and his great treatise. It is of comparatively little importance what interpretations we give to the leading positions of this memorable work, or what opinions we may hold of their truth or falsehood. We may hold that the conclusions of the author are uncertain or vacillating, that they are wholly or partly true or false; and yet we may most fervently and rationally believe that he rendered a service to philosophy, to culture, and to faith which should make him immortal.

This service may be described in a word. The "*Critique of Pure Reason*" raised questions for human speculation which could never afterwards remain unanswered. It proposed problems to philosophy which philosophy was compelled to attempt to solve. The "*Critique of Pure Reason*," if it accomplished nothing more, settled once for all the question that science, philosophy, experience, common sense, and faith rest

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on certain fundamental principles which must in some way or other be justified to man's critical examination if he would justify his confidence in any form of knowledge. It may be said, and with a show of truth, that this position had been held by every great philosopher, from Socrates down to Locke or Hume. And yet it had not been so inculcated as to be effectually wrought into the convictions of all thinking men, until Kant made it so clear that no man who knows enough to know what philosophy is thinks of questioning that philosophy must meet these problems.

An interesting example of this truth is furnished in the experience of Mr. G. H. Lewes, the clearest thinker and the ablest expounder of a school originally and by tradition at the farthest remove from that of Kant. This writer began his studies in philosophy with the conviction that philosophy is a meaningless dream, and that this could be best demonstrated by its history. He ended, after a series of ineffectual struggles, with the concession, that what he had rejected under the name of *metaphysics* not only could but must be accepted as *metempirics*, with this difference, which no man cares to deny, that *à priori* truths and relations must in some sense be justified by experience. The conversion of Mr. Lewes was slow, but it was sure. He could not face the problems which modern thinking finds in modern science without finding in them elements which are axiomatic and *à priori*. The late Mr. Whewell was in many respects an incompetent and unskilful expounder of Kant's philosophy; but his exposition, crude as it was, forced Mr. John Stuart Mill to attempt to solve the problem of induction by the *à posteriori* method. It would be impertinent here to express an opinion as to whether either failed or succeeded. All that we need to notice is the unquestioned

fact, that the riddle which both Mr. Whewell and Mr. Mill were forced to attempt to solve was propounded by the new sphinx, which not long before had lifted its weird and mysterious form from out of the sand-wastes of Germany, under the formidable name of the Transcendental Philosophy. The rankest materialists of the present age, like Alexander Bain and his associates, acknowledge certain *à priori* elements in all scientific thinking, even though they find them in those more complicated convolutions of the human brain which have been hardened from the experiences of preceding generations, and Herbert Spencer, with a simplicity peculiar to himself, continues to explain by the relations of growth and organic development the most transcendental of the relations which had been recognized by Kant or evolved by the most imaginative of Kant's successors. Strangest of all, he imagined he could checkmate Hamilton and Mansel, two ardent philosophic theists, by showing that the God whom they supplemented to philosophy by faith is demonstrated to be forever unknown and unknowable by the *à posteriori* discovery of the doctrine of the conservation of force. Mr. Spencer and Mr. Tyndall are confessedly not over-learned in the "Critique of Pure Reason;" but the First Principles of the one, and the eloquent philosophic apostrophes of the other, give decisive evidence that the "Critique of Pure Reason" has forced philosophers of every school to ask and answer questions which were formerly either totally neglected or superficially solved.

The influence of Kant upon the Continent, it is almost superfluous to say, has been far more pervasive and permanent. We may think as we please in respect to the truth or falsehood, the reasonableness or the unreasonableness, of the three or four great schools

which succeeded one another in Germany so rapidly, and each for the time occupied the attention of so many acute thinkers and eloquent expounders. But we cannot doubt that these discussions have deepened and quickened the thinking of three generations of able and learned men as no other movements have done in either ancient or modern times, and that the consequences, both direct and indirect, have been most valuable in the lectures and treatises with which they have enriched modern literature. We may think or speak lightly of German philosophy, if we choose, and in some respects, perhaps, with reason. We may wonder to see how rapid has been the growth, how wide-spread the influence, and how sudden the decay, of one of its systems after another, after each had taken possession of a generation of youth, and had controlled the theology, the jurisprudence, the politics, the literature, and the art, of a quarter of a century. One thing we cannot deny, however; and that is, the enormous "potential energy" which was hidden in the single treatise which a century ago was launched into being by this solitary thinker in a remote city lying on the borders of Western civilization, from which he had never travelled more than some one or two hundred English miles. We find, however, that these systems, as they have succeeded and in a certain sense displaced one another, have been concerned with substantially the same questions which Kant propounded at the first, and are consequently connected with the "Critique of Pure Reason" by an obvious course of development. We also find, that, within the last ten years, there has been a spontaneous movement, affecting many minds, of return to Kant, which has been signalized by the production of scores of treatises in the way of statement and criticism; as though all the errors into which recent

philosophy had fallen might be more readily discovered by retracing the steps of all to their original starting-point in Kant, and corrected by a more exact or guarded interpretation of his original dicta. This revival of interest in Kant is something unexampled in the history of philosophy. Whether it has been wholly for good, or not, one thing it most assuredly attests; and that is, the ineffaceable impression made upon German and European thinking by Kant's greatest treatise.

Were we to illustrate the influence of Kant and his "Critique" upon modern thought, we might take one of the old worn-out and barren heaths of Eastern Prussia, underneath which we should suppose there was a rich stratum of fertilizing material. It had long been tilled with shallow ploughing and superficial tending, till its scanty growth and monotonous and limited crops had become the disappointment and the mockery of both owners and spectators. A bolder operator drives the plough into the substratum beneath, and mingles its new and crude fertilizing richness with the sand which had before drawn upon its wealth in scanty measure. No sooner do the old and new begin to unite, than a vigorous growth of weeds and flowers and wheat encumber the fields, to the dismay of the experimenter and the wonder of his neighbors. Plants new to the region spring into life. Flowers of Oriental aspect flaunt their luxuriance and their gaudiness before the eye. But, as one year follows another, new growths surprise the beholder. By some the fields are thought to be bewitched and uncanny. By others they are regarded with doubtful favor as the large and generous growth of substantial grain doubtfully contends with the wild luxuriance of weed and flower. Slowly, and at last, however, the field clears itself of these strange misgrowths, till the

addition to the substantial wealth of its before impoverished soil is acknowledged by all beholders

The aptness and truth of this illustration will be justified if we recall to mind the fact that the "*Système de la Nature*" of Von Holbach was published in 1770, eleven years before the "*Critique of Pure Reason*." Though it was published surreptitiously, and no man at first dared to own it, it in a certain sense represented the last word of the philosophy of its time. Though Voltaire disowned it, and Diderot in his better judgment rejected it, though Rousseau denounced its conclusions with a violent protest of what he called his heart, there was nothing in the philosophy which had given law to the scientific world in the *Encyclopædia*, or was giving tone to the literature of either Germany or France, to justify or enforce any effectual protest against its atheistic materialism. On the other hand, whatever we may think of the truth or falsehood of the leading positions of the "*Critique of Pure Reason*," no man can doubt that it made philosophy speak words never uttered so clearly before. No one can question that the beliefs which it seeks to justify are solid realities, or that the problems which it proposes are necessary and fundamental to all earnest inquiry and to every solid philosophy. We may not accept all or any of its concessions. We may reject the most of its cautions as excessive, or as tending to scepticism; but we cannot question that it proposes to defend the reasonable and necessary practical faiths of man in the soul and the universe, in God, in duty, and immortality, in a rational and yet critical spirit. Its cautious and even its sceptical temper is reverent, acknowledging certain truths to be sacred and necessary, of which it fails to find a reason. That some of its positions tended to evil we cannot deny, — even to a scepticism as insidious, though by no means so im-

moral, as that of Von Holbach; but that its influence was in the comparison immeasurably more salutary, the history of European thought and feeling for the last century, especially in Germany, is a living testimony. We do not ascribe to Kant the chief, certainly not the exclusive, agency for the enormous and most salutary re-action in Germany which has taken place since the days of Voltaire and Frederick the Great; but we find in his philosophy a vigorous tonic, which animated and re-enforced the other forces which attended and followed it for the regeneration of Central Europe.

These general remarks may be more than sufficient to justify the homage which all right-minded and well-instructed students of history will most cordially render to the great philosopher at the close of a century since the publication of his greatest work. Time, however, is the test of all human productions; and the "Critique of Pure Reason" has been subjected during this century to manifold and trying criticisms from foes and friends. The significance of this treatise has been specially manifested in the searching ordeal through which it has passed, and the spirited discussions which it has awakened. Those of us who desire to honor its author most effectually can do so by noticing a few of the criticisms and inquiries which have been suggested by the study of the work which a century ago he gave to the world with so many misgivings, and yet with so much confidence.

1. We notice, first of all, that the terminology of the work is needlessly artificial and abstract. Speculative men have often speculated concerning the practicability of a philosophical language, and have argued eloquently of the advantages which such a language would bring to the advancement and communication of knowledge. Their arguments would seem to find confirmation in the marvellous advantages which have accrued to many

special sciences from a precise and systematic nomenclature. These advantages, however, have only been realized where the subject-matter is in a certain sense remote from common observation, and can be subjected to the rigorous test of sense experiments, aided by the refined appliances of art. When a few learned pundits are the only persons who are called to use a technical and artificial language with one another, and can speedily bring one another to the book by some decisive example or experiment, there need be no limit to the possibilities or the usefulness of a special scientific dialect. Neither of these conditions can be true of the sciences which relate to man's spiritual nature and their products, various as they are, whether they concern man's experiences or interests, his rights, his duties, or his hopes. For all these branches of knowledge, there is a common and every-day dialect, which with the many is very limited and very indefinite, and with the very few is variously extended and more or less exact. This dialect, or terminology, is for this reason capable of easy transitions and ready elasticity as each man attains to more or fewer of the new thoughts which its unusual but not wholly technical words express. Hence, every writer who would gain a hearing and a welcome from his fellow-men for new thoughts in these departments of speculation or discovery is forced to be very sparing and cautious in the use of new terms. Whenever he requires his readers to learn a new terminology, whether for old thoughts or new, in the abstract regions of ethics, law, or psychology, he is certain to find few readers, for the simple reason that his readers distrust his capacity to teach them by reason of his manifest little confidence in their capacity to learn, or suspect his overweening confidence in his own wisdom in insisting upon his newly invented vocabulary.

It has not been easy, moreover, for Kant's critics to explain the history of his peculiar terminology by its history, to determine how far it was invented or devised for a purpose, and how far it grew up in his own mind in a half-unconscious way, as he brooded by himself, as every metaphysician must, over the problems which exercised his solitary thoughts for the twenty years in which the "Critique" was taking shape, if shape it might be called.

The names of Kant's favorite authors even have not been exactly determined, and the sources of many of his favorite terms in the meanings used by himself have not been satisfactorily ascertained. Whatever their source may have been, it is certain that some of his leading terms are not precisely defined by him, either in the current language of common life, or the more technical language of the schools. Moreover, his style, as is not unusual with metaphysicians, is characteristically abstract, wiredrawn, and repetitious. For these reasons, and because the subject-matter was novel and in some cases startlingly paradoxical, this great treatise, with all its force and boldness, has always been felt to be many removes from the modes of thinking and of speech which are common to ordinary men. Its special terminology cannot easily be mastered. Those who were offended at the new philosophy would insist that it was not worth mastering. Those who rejected the new distinctions, as that between *the reason* and *the understanding*, would naturally reject the terminology which expressed them as barbarous and misleading.

Besides, and worse than all, it must be confessed, that Kant was not always master of his own terminology, either because he was sometimes inconsistent with himself, or because he did not always hold fast to his newly devised appellations. Moreover, aside from the defects

of his special terminology, Kant was not a good writer, however clear and strong he was as a thinker. Though at times he shows great power over language, and surprises you with the tenuity with which he draws out his fine distinctions of thought into delicate threads of speech; yet at other times he seems bewildered and lost in the mazes of both thought and speech, till the impatient reader longs for some short and sharp utterance which shall give in three lines the contents of a rambling page. The fact is unquestioned, that, even among his numerous German interpreters, many able men put opposite constructions upon his opinions in respect to not a few of the most important topics. Of his English expounders and translators, only here and there one has ventured upon the effort of giving any other than the most literal *transferences* (rather than translations) of his words into barbarous English: very few have undertaken to expound the great principles of his system by the free use of those conceptions and terms which are current in English philosophy.

2. Leaving the difficulties of Kant's terminology and style, we are next embarrassed by the significance of the words *critique* and *the critical philosophy*, which are used by Kant in senses peculiar to himself. We find no special difficulty in understanding that they describe the attempt to discover the ultimate principles or elements of scientific and trustworthy knowledge, and are antagonistic on the one hand to the *scepticism* which distrusts and calls in question knowledge of every sort, and on the other to the *dogmatism* which assumes certain premises without reflection or justification. We can even understand that such principles must exist, if we could but discover and test them; but when we come to inquire what is the process by which to evolve them from their wrappings, and justify them as univer-

sal and necessary, it is not so easy to answer our own questions. We naturally inquire, Is the "Critique of Pure Reason" simply a psychological analysis of the functions of the intellect when separated from its auxiliaries of sense and imagination, — the patient laborer and nimble servitor for the royal judge and imperial lawgiver known respectively as the Understanding and the Reason? If so, then it were better had this been confessed at once, and had the effort of the writer been limited to a discriminating or analytic record of the steps by which the intellect finds these elements of its knowing everywhere present, and hence finds itself everywhere using them in the products or structures which it calls knowledge. We are embarrassed at finding that Kant nowhere takes this simple view of the critical process. He scarcely ventures upon any psychological analysis. He does, indeed, accept without discussion or justification the several intellectual faculties, as sense, understanding, and reason, with only an incidental and later recognition of the memory and the imagination. His observations and his reasonings also very largely assume and rest upon the correctness of this classification of the faculties, and the assignment to each of its appropriate functions. On the other hand, the largest portion of the treatise is philosophical. Its arguments are confessedly distinguished as metaphysical and transcendental, — the one involving an analysis of complex conceptions which are supposed to be understood in a definite sense by all men, and the other the trustworthiness and authority of certain sciences which are assumed to be as universally accepted. And yet Kant will not admit that the "Critique" is a system of metaphysics proper, but only a preliminary discussion of certain questions, the right settlement of which was to determine the fate of all the metaphysical sys-

tems which should ever afterwards follow. This want of clearness on the part of Kant in appreciating the nature of the critical process, and its relation to psychology, on the one hand, and to philosophy on the other, was noticed by some of the ablest of his earlier critics, notably by *Fries*; and it has been reiterated by later writers. Had this indefiniteness been avoided from the first, the clearness and convincing force of the treatise would have been greatly increased, the writer and his readers would have understood one another better from the first; and we hope it is not irreverent to say, that the author would have better understood himself in his relations to current systems. Had he at one time been pressed hard by the psychological inquiry, Do the processes asserted comport with the testimony of consciousness and human experience? and at another by the metaphysical problem, Are the analyses and deductions truly made? he would have taken firmer and surer steps in paths which he would thereby have made easier for others to follow. Certainly his English readers, who know little of metaphysics except as approached from the side of psychology, would have found less difficulty in understanding his meaning and in accepting many of his principles. It is pertinent to observe at this point, that Locke's *Essay* is as truly and professedly a critical inquiry into the reach and authority of the human understanding as was Kant's "*Critique of Pure Reason*." We can hardly say that it is much less philosophical or more psychological in its discussions. We should remember, however, in comparing the two, that the one treatise was published nearly a century before the other. It is not strange that the second should be more exact and profound than the first, and, in its philosophical rigor, should immeasurably surpass it. It is to be regretted, how-

ever, that in some respects at least it should lack the directness and naturalness, both of its psychological method and its philosophical treatment.

3. We come next to one of the grandest features of Kant's "Critique;" viz., his demonstration of the presence of an *à priori* element in human knowledge, — not in scientific knowledge only, but in knowledge of every kind. The problem itself is as old as philosophy. By few, however, if by any, has it been conceived so distinctly and stated so forcibly as by Kant, in the elucidation of the question whether the mind can attain to synthetical propositions *à priori*, and, if so, under what conditions and by what authority. It was true, this was none other than the old contrast so sharply but imaginatively made by Plato between *αἰσθησις* and *ἐπιστήμη*, i.e., sense knowledge and knowledge by ideas, and also by Aristotle between matter and form. Even Locke could not escape the recognition of it with all the earnestness with which he combats the doctrine of innate ideas, and refers all human acquisitions to his two sources of human experience; viz., the inner and outer sense, or sensation and reflection. It is only charitable to conclude, that when Locke wrote in his second book of relations, and in his fourth of the nature of knowledge, in both of which he unwittingly introduces a third *kind* and *source* of knowledge, he had forgotten what he had written perhaps ten years previously about the only two possible *sources* and *kinds* of the same, in the two forms of inner and outer experience. How the inconsistency of Locke can be explained is of little concern to us, so long as we find in his exposition of *relations* substantially Kant's doctrine of synthetical judgments *à priori*, given in connection with, but not on the ground of, our experience of material or spiritual phenomena. We find the same concession where the critic would least expect it to be

made, and where the unconscious witness would be most unwilling to concede that he had made it at all; viz., in the exposition by Auguste Comte of the cardinal principle of the positive philosophy. This theory takes its name from its alleged survival and displacement of the metaphysical stage of thought with its *à priori* abstractions, and its serene and solid contentment with the solid and positive facts of experience. The facts or phenomena which it recognizes as real and positive, however, are only material and sensible. And yet even Comte does not content himself with facts alone. Phenomena alone do not constitute science, even in the theory of Comte, but facts or phenomena *as connected by the relations of succession and similarity*. What time and similarity are in the *repertoire* of the positive scheme, Comte does not explain. He does not seem to suspect that it is all the same so far as the great question between him and Kant is concerned, whether there are *ten or twenty* *à priori* forms, categories, or ideas, or whatever they may be called, or whether there are only *two*, as he himself unconsciously admits and provides.

The signal service which Kant rendered in this discussion was, that he settled beyond all controversy this long-vexed and much-disputed question, that knowledge is made up of two elements; viz., isolated facts and permanent principles, or phenomena on the one hand, and relations on the other. If the one element comes by experience, and in it the mind is a recipient and passive, the other comes by the mind's innate power and prerogative to know, in the exercise of which the mind is pre-eminently active, and appeals to its own sovereign authority. When we say that he settled this question beyond all dissent, we certainly do not intend that no thinkers have entered a protest against his position in the form in which he asserted it, but that in

some form or other all thinkers now admit it in fact. Even the grossest of materialists at present seem disposed to endow the ultimate atoms which they accept as the *semina rerum* with an original capacity to develop themselves under favoring circumstances into new forms of being, and even into thinking agents. Moreover, when these atoms rise to the dignity of thinking agents, they not only begin themselves to geometrize, but they assume, by an enormously comprehensive synthetic judgment *à priori*, that the Eternal Force which animates the universe has also geometrized from the beginning of the nebular accretions. If also we know him as Force, though we know nothing more of him, we must know this at least *à priori*, that he is a causative agent, and acts according to law; and law implies at least number and measure. If also there has been development and evolution from the beginning, then we are forced to interpret this all-pervasive and all-explaining relationship by a plan of progress vast enough to include every description of successive phenomena, and enduring enough to cover every step and stage of manifestation, from the simplest to the most complex of events.

4. The strength and consistency of Kant's position in respect to the *à priori* element in knowledge as a *product* is strikingly contrasted with the weakness and vacillation of his views of the nature and authority of knowledge as an *act*. In analyzing human knowledge as a *product*, without reference to the agent, he shows beyond question, that it must imply *axioms* or *à priori truths*. In criticising the *power* in man by which this act is produced, he concedes that much if not all which is thus assumed as true by him may not be real in fact. This results from the want of clearness which we have already noticed in his conception of the critical *process*

by which he at one time tries the *product*, and at another confounds and blends the two. It is not surprising that the operator or analyst should fail in using the instrument, the nature of which he fails fully to define.

One or two examples will illustrate our meaning. Kant distinguishes three several capacities and modes of knowledge: (1) Intuition, in the two forms of the outer and inner sense; (2) Thought or judgment, giving concepts or generalized attributes or relations; (3) The reason, giving the ideas of the soul, the cosmos, and God. It is in the analysis of sense-perception that he conspicuously brings our confidence in the act of knowledge into suspicion and distrust. While he finds here both space and time relations as *à priori* elements, and proves them to be such by the self-evident character of the pure mathematics, he concedes that they may be *à priori* to human beings only, and therein concedes that his *synthetic judgments à priori* may be true and necessary of man alone. They *may* be true universally, but we are not justified in asserting that they are. They are certainly transcendental to man, — possibly to other beings; but, whether they be so or not, we can neither affirm nor deny. This gives us a *transcendental idealism*; i.e., axiomatic or *à priori* truths for our human ways of knowing, or for the universe only *as known to us*, but not necessarily for the universe as existing in fact. What we desire and demand is a *transcendental realism*, — a knowledge of those necessary principles which hold of the universe of fact or actual being. This can only be attained as we set off with the assumption, that knowledge is the correlate or counterpart of being or reality. This Kant never either admits or asserts, and always fails to appreciate and propound.

It is not difficult to see how Kant committed this fatal error, and at what point he shifted the switch which

shunted a long train of consequences in a wrong direction. We find it at the very outset, where he contrasts the power of sense (both inner and outer) as receptivity or passive with the understanding as *spontaneity* or *an active energy*. What led Kant to assert for sensibility *passiveness only*, it is easy enough to see. The senses as such, in their physiological or psycho-physiological nature, are receptive, and change with the changing constitution of each individual animal. But the sense or perceptive power as such, so far as it involves the function of knowledge, is as truly active and spontaneous as is the act of the intellect upon any other object-matter. The knowable objects with which it has to do are also as real and as trustworthy, so far as they are properly known, as are the objects of what are called its higher functions. That it falls into error, and frequently when it has to do with both, is a matter of every-day experience. This no man calls in question. The only question with which we are concerned is, whether the *à priori* relations which are assumed in sense knowledge are any the less real than the *à priori* relations which are assumed in the higher. That they are, was conceded by Kant in calling sense a receptivity only, in contrast with that spontaneity which he limits to the higher functions.

The false position thus taken was weakened rather than strengthened by the expedient resorted to by Kant in order to defend and justify it. The receptivity thus assumed, so far as man is concerned, is obviously shut up forever within the flaming bounds of space and time. Whether the objects we know are objects of sense or experiences of the soul, we must know them as extended or enduring, — one or both. This Kant was forward to assert, and here he finds the first example of a transcendental element in sense experience. How, then,

could he connect this higher and necessary element with the passive receptivity from which he had apparently bargained away the prerogative to attain to any necessary or permanent truth? Fortunately for him, the shadows of a defunct philosophy had not all vanished; and he proceeds to endow this passive receptivity with *form*. *Form* here came to his aid, — that magic term with which Aristotle had displaced the ideas of Plato, and which had served the Schoolmen many a turn in their metaphysical perplexities. So far as the mind is receptive in sense and consciousness, it has to do with the *matter* of human experience. So far as it is active, it receives this matter in sundry *forms* which are universal. These forms are space and time, — the one for the outer and the other for the inner sense. This magic term was no sooner suggested than it seemed whispered by some philosophic Egeria in the holy cave of musing contemplation. First of all, it squared with the conception of receptivity already assumed of sense as contrasted with thought. Next, if man is a recipient of the universe in sense, he cannot receive the whole of it at once; it must be divided into morsels and poured out into goblets: then, too, the viands must be served in order; and over against the infinitude and possible chaos without, there must be subjective capacities to receive after a particular fashion provided in the constitution of each recipient within. Then, again, space and time relations are in their nature different from the commonly recognized attributes of matter and spirit, and refuse to be classed with those sensible qualities which presuppose them. Above all, space and time themselves are something ultimate, which are assumed in all special and determinate relations of place and shape, now and then. To all these requisitions the word *form* seemed admirably adjusted.

Justice to Kant requires us to notice that he does not fail to raise the question, whether it follows, because space and time are the necessary forms of our human receptivity, that they have no objective reality? To this he frankly replies in the negative, but adds, with equal frankness, that, inasmuch as they are necessarily *à priori* only to ourselves, we are utterly disqualified from deciding the question whether they are *à priori* to beings otherwise constituted. In other words, he leaves us with the conclusion, that, whether they are or not objectively real, it is all the same to our perceptions and to our science, because we are forced to receive, i.e., to know, the phenomena of matter and of spirit under the relations of space and time, and to think and talk and reason as though these relations are ultimate and *à priori*, and, so far as our knowledge is concerned, are objectively real. This establishes our confidence in science and philosophy by proving, that, in sense and consciousness, the synthetic judgments of time and space are necessary and *à priori*, — at least to man.

This sums up the doctrine of Kant in respect to the nature of sense knowledge, considered as a mere receptivity. We may speak of his views of consciousness in another connection. Our criticism of this theory may be summed up in a word. So far as sense perception is receptive, and excludes spontaneity, it is not an act of knowledge at all, and cannot be at all concerned with space itself, but only with objects related in space. The convincing demonstrations of Kant, that space relations are apprehended in connection with sense experiences, and yet are independent of the same in their self-evidence and authority, are founded on an analysis of the conceptions and processes of the pure mathematics, which confessedly have nothing to do with the act of sense knowledge when conceived as a passive recep-

tivity. The suggestion of the possible idealism of space and time as the best explanation of their *à priori* necessity in human thinking, is a skilful expedient to make the best of a fatal and unnecessary concession. This fatal concession was an inadequate and mischievous conception of the nature of human knowledge. The concession was dictated by Kant's extreme caution in taking his positions, joined with his acceptance of some of the traditions of his time. The materialistic conceptions of the mental processes and their products, which had literally swarmed in the pages of Hume, were not easily exorcised; and the readiness with which in our time they have come again into the kneading-troughs of our magicians, like the frogs and flies of the Egyptian plagues, under the guise of physiological and cerebral psychology, forms the best explanation of the false conceptions which embarrassed the well-meant but unsuccessful struggles on the part of Kant to establish a better system. He would have cleared himself of all these embarrassments had he but clearly asserted that in knowledge man is always active, and that to knowledge reality is always a necessary correlated object, whether that object be a phenomenon or a relation.

5. Kant's distinction between *phenomena* and *noumena* is both vague and vacillating. It is neither clearly stated nor consistently maintained. The *phenomenon* is represented clearly enough as the temporary, the individual, and the contingent; and the *noumenon*, on the other hand, as the permanent, the universal, and the real. The one is the thing in itself, a permanent and abiding force or cause or agent; the other is a manifestation which is casual and conditioned. The one is discerned by the senses or consciousness, the other is interpreted by the mind. So long as these contrasted conceptions are popular, they are intelligible. It is only

when they are strictly scanned and carefully defined that we find a difficulty in fathoming or stating the meaning of Kant. We say very intelligibly of our relatively superficial knowledge of any material or spiritual object, as contrasted with a deeper insight into its nature and laws, that we know its appearances, but not the *thing in itself*. We fancy, moreover, that the accomplished chemist or physiologist can somehow penetrate with magic look or touch into the real essence of a compound or a tissue or an organ; but we find, on second thought, that his knowledge is only more manifold or more recondite, better classified or better defined, than that of common insight and common speech. The deeper insight into the real essences of *things as they are* and not as they appear, which is attained by the most consummate specialist or the most accomplished scientist, is rather a promise to the ear than an attainment to the mind, if more is expected from either than a statement of a relatively greater number of effects which the agent can achieve under the greater variety of conditions under which it occurs, or of purposes to which it can be applied. So far as the world of sense is concerned, it may be true, that we cannot know things in themselves, that we are limited to phenomena alone, and that human science can go no farther than multiply its observations, add to its inductions, and make its definitions more precise, comprehensive, and systematic. But, should we concede all this of material things *in themselves*, it does not therefore follow that more is not true of the mind's knowledge of itself. Let it be granted that sense knowledge gives us the phenomena only at which we gaze as they fly, that these are formed into things as the masses of vapor are held in form and place and color by the great forces which penetrate and mould them into mountains and glaciers and pasture-lands and forests and rocks, till in an

instant they vanish into smoke. Let this be granted, and still it may be none the less true, that the thinking agent is known to and by itself as a *thing in itself*, i.e., a potent and permanent and identical reality, and, indeed, that it must be so known in order that any contrast should even be suspected by the mind between a thing in itself and its manifestations or phenomena. All this Kant overlooked, and, in overlooking it, in effect denied. As in the sense-world he found phenomena only, so in the spirit-world he recognized only ideas; or, rather, by recognizing only phenomena in either, he reduced the world of both matter and spirit to the ideas appropriate to each. Starting with the laudable purpose to emerge from the shadowy world of impressions and ideas into which the scepticism of Hume had brought him, he succeeded so far as to find it necessary for the purposes of science to connect these phenomena by *à priori* forms and categories and ideas. He found, however, that, even if the relations which connected phenomena were real and necessary, the materials were shadowy still, and that consequently the universe of matter and spirit must be resolved into a system of related ideas or phenomena given in what we call sense and consciousness. Things and realities were nowhere at the end because they were denied at the beginning. The conjurer had undertaken to draw out of his pocket more than he had put into it; i.e., to evolve realities from ideas by metaphysical jugglery. He thought by the force of necessary and *à priori* relations to make a real universe of matter and spirit out of the phenomena of each, not reflecting, that however authoritative and permanent may be the relations of time and space and causation, and even of design, if the agents or forces which they connect and explain are not real, then the conclusions to which they lead, and the combinations into which they enter, must

be as shadowy as the data from which they are derived, and the materials of which they are composed.

It is worthy of special notice, that Kant seems specially sensitive in his hostility to every argument which might be urged in favor of the reality and knowableness of *spirit* as a thing in itself. It would seem as though at times he was more than suspicious that here was the weakest side of his entire theory. Again and again he denies that the soul has any other unity than that unity of apperception by which many sensations are connected in a one so-called material thing: there is no proper continuity of being known to and by itself, but only an uninterrupted flow or succession of phenomena; no substantiality, because the concept of substance can be affirmed only of the subjects of sense in space or picturable phenomena; no permanence or immortality, because these could belong only to substantial, i.e., material, things. In other words, the ego in all these contrasts is reduced to a psychological expression, as insignificant and contemptuous as had been done before him by Hume, or in our days by Mr. Huxley. We find also the distinct denial of the capacity of the soul for self-consciousness of its own states or of itself; indeed, for any thing more than the "thread of consciousness" or the unity of apperception by which successive mental states are connected as one.

Over against these jealous and violent efforts of Kant to deny the knowableness of the soul as an agent with a definite nature of its own, we would set the whole argument of the "Critique," from beginning to end, so far as it defends and expounds transcendental idealism. We contend that its doctrines of the forms of sense, and of the categories of the understanding, and the ideas of the reason, are, from beginning to end, a series of psychological conclusions or assumptions in respect

to the nature of the soul *as a thing in itself*. They not only imply and assert that the soul has an essential nature, but that this essential nature is knowable by man. They not only in fact, but by profession, penetrate beneath its phenomena, and find there a nature or constitution capable of moulding the universe of sense and matter by subjective forms, categories, and ideas. They propose to show that all the knowledge which man can attain is only phenomenal, and this by an analysis into the nature of the soul itself. They find, beneath the forms, the categories, and the ideas, the soul with a nature which compels it to mould and connect and systematize and interpret the phenomena of the inner and outer universe by the relations and into the products which its own constitution requires. This is the logic of the entire treatise, the height of whose great argument would have been reached had Kant climbed with careful steps to its summit, and reviewed its result somewhat as follows: The pure reason is an agent known to and by itself as so constituted, or of such a nature that it discerns the phenomena which it is capable of receiving, under those relations by which it necessarily connects and explains them. So far as the soul can critically examine and study these experiences, so far does it penetrate into its own nature as an agent or thing in itself. Philosophically conceived, a thing in itself — whether it be matter or spirit — is known and is knowable so far as its powers to act or achieve effects under varying conditions are known. The effects achieved, as distinguished from the agents which produce them, are phenomena. The One Mind which originated and sustains the universe of things, alone knows all the capacities of any of the agents which he creates; and he alone fully knows the nature of the simplest as well as the most complex, as it is in itself.

Surely Kant ought to have conceded, that if nothing else is known to man *as a thing in itself*, or a *noumenon*, this is true of the reason itself as revealed to itself by the critical process.

As we have seen, our philosopher reached no such conclusion, but wandered in endless mazes till he often seems bewildered and lost. But, whatever else he loses, he never loses courage. In his extremest bewilderment he ever and anon catches up his clew, and threads his way backwards and forwards till he seems to strike his path afresh, and go forward with unabated courage. But he never could overcome the fatal inconsistency involved in the attempt to analyze the essential nature of the pure reason in the abstract, in order to show that it has no nature in the concrete which can be analyzed.

Did our space allow, we might show that the reality of *matter*, and its knowableness by man as a thing in itself, are also perpetually assumed by Kant whenever he refers to the universe as phenomenal only. Even if the senses are only receptive, they suppose reality in the matter which acts upon them. The receptivity of the senses supposes an agent which lies beyond and without, from the causative activity of which the recipient can never escape. To say that we are not sensitive to all the capacities of these agents, is to confess that we are finite. If we must know any of them *completely* in order that we may know any thing at all, then we can know nothing of any thing, whether material or spiritual. The result of such experiments might teach us that it were wiser to dig for the pot of gold which lies under our own feet, and be content with what we find, rather than to chase round the earth till we lay hold of the end of a rainbow.

It might be contended, that Kant's theory of knowledge, whether of mind or matter, is not complete till

the action of the understanding is superadded with its categories, and of the reason with its ideas. This in one sense is true. So far, however, as the points are concerned which we have introduced, we need go no farther. Kant does not profess that the understanding and reason can bring deliverance from the circle of limitation and helplessness within which he had shut himself by the concessions to which we have referred. That circle shuts him off forever from the knowledge of things as they are. The phenomena of matter and spirit are all preserved. Science pure and applied is provided for in its axioms and methods. Man believes and reasons as if his soul, the universe, and God were realities. But reality is beyond man's reach; for all that he knows is phenomenal, and things in themselves or their essential nature he cannot know. To this condition of conscious strength and confessed weakness did Kant's "Critique of Pure Reason" bring him and his disciples.

It is no paradox to say that both the weakness and the strength of the critical school lifted it to a position immeasurably superior to that of the shallow sensualism and the dogmatic scepticism which it had effectually displaced. The pretensions of mere experience and the authority of so-called facts it had silenced forever by demonstrating that either or both without relations and principles must be insignificant and worthless. The sceptical caution which refused to affirm *à priori* relations of any other than the human reason was in its turn a rebuke to the dogmatism which had hitherto been regnant in the schools. Both introduced a new spirit and method into modern speculation, and emphatically taught the new generation that there are more things in heaven and earth than had been dreamed of in its traditional philosophy.

6. We notice next the profoundly ethical spirit of Kant's philosophy. It is a commonplace to say, that what Kant failed to reach in the domain of the pure reason, — rather what he demonstrated could not be reached, — he believed was fully attainable through the practical or moral reason. What he blindly clutched at in the dim and uncertain light of intellectual speculation, he imagined he could firmly and strongly grasp under the broad noonday of the moral convictions. These convictions he assumed to be as real as the indisputable and axiomatic certainties of the pure mathematics. Much after the same fashion as he found that geometry and number implied the assumptions of space and time, did he reason that the intuitions of duty implied the actual validity of the ideas of the soul, of immortality, and of God. If this were so, then the mind is no longer limited to the relatively *à priori*, with which it is forced to content itself as the utmost to which it can attain. Through the practical reason, nay, at its command, it can lay hold of *things in themselves*. It confidently fastens itself to the actual first and supreme, because it commands itself to accept those verities which it must believe in order that it may command itself to be and do what it knows it ought to attain. In using the categorical imperative, man also knows himself to be free. In asserting that he is free, he pierces through the shell of phenomena, and reaches *the thing in itself* which lies beneath; viz., the soul's own veritable existence. In asserting the actual existence of man, we imply the necessary conditions of his moral life and destiny. These give reality to the world of matter, to the immortality of the responsible soul, and the moral providence and retribution of God. So long as we rest in the intellectual sphere, all is dim and uncertain. We are in a world of shadows, — a world orderly, systematic,

and rationalized indeed, but still necessarily uncertain and phenomenal. But, the instant we emerge into the ethical, these shadows are crystallized into realities. What was a weird and ghostly structure is transfigured into a temple built without hands, eternal in the heavens.

Whatever we may think of the soundness of this theory, we cannot but admire its boldness and its elevation. However fervently we may protest against the gratuitousness of the concessions by which the battle seemed so near to being irrecoverably lost, we cannot but admire the boldness of the movement by which it seemed to be more than recovered. The effect of these positions upon the subsequent course of modern speculation has been most salutary. Ethical relations were henceforward exalted to a supreme place in philosophic thought. Freedom, duty, immortality, and God were not only recognized as subjects of the highest dignity in speculative schools, but it has been more than acknowledged, that any system which did not recognize these conceptions and relations, and explain the phenomena which they involve, must be superficial and defective. So soon as the school of Kant was established, the frivolous and insincere dogmas and critiques of *savans*, the sensual orgies of the voluptuaries of the *salon*, and the sentimental declamations of the school of nature, were by common consent set aside and displaced by the grand and commanding relations which the categorical imperative introduced and enforced.

It was impossible that modern thought should ever go back from the point to which it was carried forward by the uplifting and surging force of Kant's eloquent and impressive utterances in respect to man's moral convictions and emotions. We believe, indeed, that the moral dignity and strength of Kant's system have been the prin-

cial sources of its enduring popularity. Multitudes who could understand little, and who cared less, about the speculative questions which he raised, and who were ready to find in their own incapacity to follow his analyses a decisive argument that all purely speculative inquiries are incapable of any solution by the human understanding, have been ready to assent to the comparatively easy analyses of his critique of the practical reason, and his positive assurances that these must settle every question of speculative import. It was as an ethical system that Kant's teachings first found introduction to the English mind through Coleridge, Carlyle, and others. The so-called agnosticism which came in afterwards was originally taught by Hamilton and Mansel, in the ethical spirit of Kant, and with the ethical adjuncts with which he fortified his speculative system. It ought not to be surprising, that, when it lost these adjuncts, it experienced a sad degeneracy. When freedom was sacrificed to the remorseless dominion of natural law, and responsibility and self-command were resolved into physiological outgrowths, and the moral law itself was sublimated into a fiction which society may make and unmake at its will, it is not surprising that the noblest speculative conceptions of Kant should be travestied into cheap imitations under hallowed names, and the unknown and unknowable of the speculative reason should be boldly interpreted by a material force, and reason itself, both practical and speculative, should be resolved into highly convoluted and intensely specialized masses of nervous matter.

But, while we assert for Kant's ethical system an unquestioned dignity and practical importance, we do not thereby accept it as true. First of all, we do not accept, for the reasons already given, his theory of the limitations and impotence of the speculative reason which in any sense should demand such a buttress and supple-

ment as his practical reason furnishes. We do not see why, if the self-conscious spirit should be able in the special experiences of moral freedom to discern the real as contrasted with the phenomenal ego, it should not be able to discern the same in the ordinary activities of the man. We grant, that, in his ethical activities and judgments, its existence and activity may seem more energetic and positive, but not necessarily more real or trustworthy. Again, we cannot accept his reasoning that the free, substantial, and therefore the possibly immortal, ego must be assumed, or morality is impossible, when the very question of questions nowadays has been inverted into, "*Is* man free, and therefore is morality possible?" We do indeed allow the test of practical consequences oftentimes to decide the question of truth. But this signifies only that the actual convictions of men are best ascertained when tried by practical rather than speculative tests, and that his ethical convictions are pre-eminently positive and certain.

Nor, again, for an instant can we accept the doctrine of the categorical as contrasted with the hypothetical imperative, which Kant's system has made so familiar. We assent most heartily to the emphatic utterances with which he asserts the reality of freedom and personality and obligation; but we cannot, for this reason, believe that the law of duty is not derived from the known nature of man, and imposed on man by himself in view of its discerned excellence and worth, and is in this not blindly, i.e., categorically, commanded, but in view of the excellence of the activities and results which its realization involves. If the last is true, it is hypothetically commanded in terms like these: If you would fulfil the high ends for which you exist, and take the place in the universe for which you are fitted, you will choose so-and-so. Such a choice is morally right.

Therefore, it is your duty to make this choice in view of the excellence of which your intellect is a competent judge. This view of the imperative of duty makes it no ultimate category of either belief or action, but assigns it a place under that of *purpose or design*. It connects the practical and speculative reason by this one relation common to both. The view of Kant severs them by an impassable chasm, which Kant's frankness seems more ready to suspect than his ingenuity is competent to bridge over or fill. Last of all, the rejection of all relationship between the natural and ethical sensibilities and conceptions, in order that the last may be kept pure from all empirical content, or any considerations of happiness or well-being, is open to the most serious speculative and practical objections. Schiller felt and acknowledged it, even in the fervent glow of his first conversion to the stoical severity and lofty idealism of the Kantian ethics. His well-known lines have often been quoted which express the speculative and practical dilemma which the theory involves. A difficulty is proposed : —

“Willing serve I my friends all, but do it, alas! with affection;
And so gnaws me my heart, that I am not virtuous yet.”

It is answered thus : —

“Help, then, but this there is none : you must strive with might to
contemn them,
And with horror perform, then, what the law may enjoin.”

The objection urged by Kant against any system which founds moral relations on the relative excellence of the natural sensibilities, when brought under voluntary control, that it is Eudæmonistic and necessarily *unmoral*, is answered against Kant himself by the well-known fact, that he rests his argument for the reality of God's ex-

istence and his moral dominion altogether on the eternal fitness enforced, as he claims, by the categorical imperative, that the morally good should be made sensitively happy. If this is true, then it must be assumed that virtue should be rewarded by happiness; or, to express the truth in abstract terminology, there is an eternal and *à priori* relationship between virtue and happiness. The only possible escape from a palpable contradiction of thought in this argument can be reached by taking the position, that though there is an eternal and *à priori* and self-evident necessity that the virtuous should be made happy, yet, if they act under the knowledge of this fact, they will cease to be virtuous. In other words, while it is absolutely necessary that God should exist in order that the virtuous should be made happy, it is equally necessary that they should not know this necessary truth, or at least not be influenced by their knowledge of it, in order that their acts should be virtuous.

It would be quite out of place, however, to attempt any extended criticism of Kant's ethical system. Schleiermacher, Trendelenburg, Lotze, and Bona Meyer, and others, have recognized and exposed its weak points. Its practical excellencies and the services which it rendered are most emphatically confessed by those who are most alive to its defects.

7. It remains that we should notice the influence of Kant upon theology. That his immediate influence should have been disturbing was most natural. A system so positive, so peremptory, and so highly technical, could not but exert a positive effect upon the current modes of thinking and writing in respect to the fundamental truths of theological speculation. Its novel and highly technical dialect would seem to express new ideas, whether with or without reason. But whatever

novelty of ideas or terminology might have invaded theological circles as a consequence of the teachings of Kant, and however puzzled the old theologians might have been by the Babylonish dialect of the new, theology itself was recognized by him as the haven of all man's contemplations, and the mistress of all human sciences. Both the Kantian metaphysics and ethics were emphatically and confessedly theological. God was assumed as in some sense an ethical, if not a speculative necessity to all human thinking; and the destiny of the soul, if not its future existence, was held to require and to rest upon faith in God. Indeed, we may say with confidence, that one of the most memorable services rendered to modern thinking by Kant's essay was its introduction of God as a necessary element and axiom to all subsequent thinking which should claim to be called philosophical. In 1771 the "*Système de la Nature*" was supposed to have finally and effectually banished the idea of God from all philosophical schools as an exploded figment of the human imagination. In 1781 the "*Critique of Pure Reason*" demonstrated that it is not possible even to think of the universe rationally and systematically without the assumption of a thinking God. Such a God must consequently be a personal being, who may accept personal worship and affection, and is able to make himself known to man by personal manifestations. Whatever vagueness or uncertainty might be suggested or implied on the speculative side in respect to the knowableness of God, or man's capacity to define or formulate his conceptions of God, these difficulties were all set aside by the demands and capacities of man's ethical nature. The beginnings of our modern agnosticism were doubtless suggested in Kant's antinomies, and his misgivings as to any possible adjustment of the categories of the understanding with the

ideas of the speculative reason; but these difficulties were thought to have given way to the overbearing demands of the practical reason. So long as man knows himself to be free, and commands himself to reverence the law of duty, and so long, also, as he requires that virtue shall be rewarded and vice shall be punished, so long is it not only possible, but necessary, that God shall be believed in as himself personal and free. Since theology, then, as distinguished from religion, rests on an ethical sanction, it can be tested by its ethical import, and this whether it is natural or revealed. So far as it has a moral content, it may be accepted as true. So far as it is immoral, — i.e., in so far as it fails to commend itself to the practical reason, by which all religion stands, — so far is it known to be false. Positive or revealed religion, however, must also be morally necessary. Such necessity Kant recognized in the sinfulness of man, which he conceived as a permanent and universal supremacy of desire or passion over the practical reason; furnishing an obvious occasion for the interposition of supernatural influences in the economy of grace.

But, while Kant found a place for all the fundamental conceptions and many of the special teachings of Protestant orthodoxy, it must be confessed that he placed chief emphasis upon the moral rather than the supernatural, — upon the ethical import rather than the historical or supernatural facts of the Christian system. For this the theologians of his time are largely responsible. With scanty exceptions, the Protestantism of his day had become a system of dead orthodoxy and political ritualism, in which facts, dogmas, and worship had become largely emptied of all their quickening ethical significance, and had lost much of their spiritual meaning and power for the conscience and the heart.

The feeble religious life which survived, and was slumbering in the embers which had outlived those fiery controversies in the schools and on the field which succeeded the Reformation, had little or no intellectual or scientific significance.

It is very common to charge what is called modern rationalism upon the rise of the critical philosophy, and to denounce it under the vague designation of transcendentalism. It were altogether more exact and rational to find in the teachings of Kant the germs and explanation of a powerful religious movement in two opposite directions, one positive, and the other negative.

We have briefly explained the definite recognition of the ethical which we find in Kant's own system, leading to a positive faith in the supernatural, as also the importance with which this was invested by him as a source of natural, and a recipient or medium of supernatural knowledge. By many of his successors, notably by Jacobi and Schleiermacher, *Faith*, more carefully phrased as the *Sense of dependence*, or the *God-Consciousness*, was definitely substituted for the practical reason, and made to do duty as an organ of speculative, ethical, and theological truth. In England, Coleridge, Hamilton, and Mansel were more properly disciples of Jacobi than of Kant; and it is through these representatives that the first type of transcendental supernaturalism became familiar to the English mind. The influence of the theological school which thus originated among English-speaking people has been profound and pervasive, and its existence and strength is a convincing refutation of the charge against the Kantian philosophy as necessarily anti-supernatural. It is neither false nor extravagant to say, that many of the ablest expounders and defenders of supernatural Christianity during the last two or three generations upon English

and American soil have been of the so-called transcendental school.

It is equally undeniable, that we find in Kant's teachings the germs of three schools of anti-Christian or anti-supernatural theology; viz., the naturalistic, the pantheistic, and the agnostic schools, all having this feature in common, that they reject the miraculous as either unnecessary or impossible, and therefore as historically incredible or false.

The *naturalistic* or rationalistic school is represented by all those who hold, inasmuch as the leading truths of morality and religion must justify themselves to the practical reason of man, that therefore they cannot be made the matter of supernatural revelation, or do not need to be so enforced. The dilemma into which they seek to drive their antagonists is the following: Man can or can not know all essential moral or religious truth without the instruction or aid of supernatural communications. If he can, there is no need of such a revelation. For why should that truth be revealed which is or may be known already? A supernatural revelation in such a case is superfluous. If he cannot know these truths, then such a revelation is impossible; for the ideas and truths which man cannot understand by their own light, or be convinced of by their own evidence, can neither be made intelligible by any extraneous explanation, or credible by any external proof. A supernatural revelation is therefore impossible. It follows, that a supernatural revelation is either superfluous or impossible. This argument is the staple or current argument with many well-known English writers, who are more or less emphatic and conspicuous in avowing their adhesion to Kant's ethical system. Such are Theodore Parker, Francis W. Newman, Frances Power Cobbe, James Anthony Froude, and Thomas

Carlyle. How Kant provided against this application of his own theory, we have already explained. Other reasons, indeed, are urged by these writers to enforce their rejection of an historical and miraculous revelation. But this position is common to them all.

The *pantheistic* school is only indirectly related to Kant. Historically it can be traced to him through his doctrine of the impotence of the pure reason to define or justify man's belief in the Infinite. While he professes to overcome this impotence by means of the practical reason, and so escapes the immediate pressure of the difficulty which he acknowledges, he leaves all its difficulties to those who do not accept the relief which he provides. There are not a few who not only fail to find this sharp contrast between the pure and practical reason, but to whom the contrast itself is philosophically offensive, and to whom the difficulty of accepting the proffered solution of the problem only enhances their sense of its inherent difficulties. To such the conception of an organism with the interdependence and interaction of its constituent parts with one another and the whole as mutually means and ends, presents the most satisfactory solution of the existent universe and its orderly arrangements. That the universe is a self-existent organism, in which matter and spirit are mutually dependent for being and function, is to many the most rational explanation of all finite existences and finite phenomena. The pantheistic doctrine and the pantheistic school are only indirectly derived from Kant. His many-sided and enlarged understanding was the first to do ample justice to the conception of an organism and the organic,—conceptions which, since his time, have played so distinguished a rôle in the sciences of nature, and pre-eminently in the sciences of life. Schelling, with quite as much of a

poet's quickness to suggest analogies as of a philosopher's solidity in critically judging them, used the fact of the organic interdependence of the finite viewed from within as equivalent to its complete independence on any self-existent from without, in a manner which Kant had been too cautious to sanction by example or authority. The consequence was, that, upon the sober background of man's demonstrated incapacity to formulate the self-existent, Schelling did not hesitate to portray in brilliant diagrams the successive stages of the process by which the self-existent universe developed itself into beauty and life. Spinoza, in place of Kant, became the hero of the hour; the chief relation of both Schelling and Spinoza to Kant consisting in the fact that they confidently answered the many questions which Kant had the sagacity to propound, but professed to be unable to answer. Hegel followed Schelling! But it is not within our province to indicate through what phases of thought Schelling and Hegel sought to solve the problems which Kant proposed in respect either to theism and Christianity, or in regard to man's power to know.

The *agnostic* school, technically so called, interprets the Kantian position, that man cannot formulate the Infinite by the relations of the logical understanding as equivalent to the assertion that he cannot know God by the intellect at all, and proceeds to supplement the same by the analogies suggested by the doctrine of the correlation of force to the conclusion that though we can know *that* God is, we cannot know *what* he is; thus philosophically demonstrating that God cannot be known by man, either through the axioms of intuition, the interpretations of nature, or the revelations of miracle. Moreover, inasmuch as the great law of evolution must be accepted as holding true of all growths what-

ever, of phenomena and of being alike, of the categories as well as the objects of knowledge, of man's conceptions of things earthly as truly as of his faiths in things divine, it follows that the concessions of Kant concerning the intellectual unknowableness of God have, in the light of the evolutionary metaphysics, become as solid as any truth can be made by a system which rests axioms and experiments alike upon a formula which subjects all knowledge to uncertainty and change. It requires but little knowledge of Kant to justify the assertion, that the logical connection of the materialistic agnosticism of Spencer with the intellectual caution and moral fervor of the philosopher of Königsberg is slender in the extreme; while the moral unlikeness of the two theories is as great as can easily be conceived.

Nothing more strikingly illustrates the intellectual and moral greatness of the sage whose centennial year we observe, than the depth and breadth of the problems which he proposed, and the sagacity with which he measured the difficulties which must beset their solution.

We ought not to be surprised that the countrymen and students of Kant have of late turned to the study of his writings with a quickened interest. Their interest is more than a critical curiosity into the import of his terminology and the interpretation of his sentences. As we have already stated, we find the explanation and the justification of this revived interest in Kant in the clearness and comprehensiveness with which he appreciated the great problems of philosophical inquiry, and the acuteness with which he states and answers the questions which must be forever renewed by man, and, above all, in the thorough and honest love of truth by which he was animated. It is to the credit of the present generation that it does not despair of philosophy, and that for this reason Immanuel Kant to-day finds more

readers in Germany, France, and England — to say nothing of America — than when, a century ago, he summoned all Europe to hear the interpretations of the new philosophy, and all Europe responded to his call.

XIV.

THE COLLAPSE OF FAITH.¹

THE manifold phases of religious doubt and questioning which have succeeded one another so rapidly in this our sensitive and mobile generation, are well expressed by a few descriptive phrases, which are more or less significant and forcible. The metaphor which lurks behind each one of these phrases is at least suggestive of reflection and inquiry. "The Eclipse of Faith" suggests the darkness and gloom which for the moment may oppress the individual or the community. But it also suggests the conviction, or at least the hope, that this condition may be only temporary. The sun is not extinguished because it is darkened. The individual man, or the community, perhaps needs only to change its position in order to come again into the bright and blessed light. "The Decay of Faith" emphasizes some diseased or abnormal action of the powers, from which recovery is possible. Should such a decay terminate in the dissolution of the individual, the life of the community may still go on, and perhaps with renewed energy. Both these phrases imply, if they do not express, the underlying conviction, that faith has solid grounds of truth on which it may rest; and consequently, though an individual or a generation may falter in its allegiance, the truth will not fail to shine upon other souls and upon other generations with intenser brilliancy and effect.

¹ The Princeton Review, March and May, 1882.

But what phrase shall we select to express that type of unbelief which seems to have taken so strong a hold of not a few of the present generation, — whether they are unwilling sceptics, agnostic seekers who never find, or earnest and reverent souls who are in terror lest God and his truth have ceased to be because so many wise men deny them? What shall we say of the alarm of those lookers-on who observe, not merely that many faintly believe, but discover the more appalling evidence, that multitudes are drifting into the half-formed conviction that the reasons for faith seem one after another to be dissipated by the advance of science and culture as morning clouds melt before the morning light?

No phrase seems more fitting for this state of mingled doubt and fear than “The Collapse of Faith,” whether it describes the failure of faith, or the fear that this failure is reasonable, and is likely to be universal. Other phrases make the presence or absence of faith to be dependent on the subjective condition of the persons concerned. Whether the hinderances to faith in these cases be intellectual or moral, they have only to be removed, and the light of truth will appear again. The condition for which we seek a suitable appellation is the more or less settled and prevailing conviction, that faith is not only failing, but that it is doomed to a slow but certain dissolution, and that all the indications of the prevailing time-spirit justify this conclusion.

We are well aware that the presence and prevalence of such a conviction are no new phenomena in the history of Christendom. Bishop Butler recognized a similar collapse of faith in his time in the words so often quoted: “It is come, I know not how, to be taken for granted by many persons, that Christianity is not so much a subject of inquiry, but that it is now at length discovered to be fictitious; and, accordingly, they treat

it as if in the present age this were an agreed point among all people of discernment, and nothing remained but to set it up as a principal subject of mirth and ridicule, as it were by way of reprisals for its having so long interrupted the pleasures of the world." It was doubtless his reflections on this condition of opinion which led him on one occasion, when walking in his garden with his chaplain, to stop suddenly, and ask the question, "Why might not whole communities and public bodies be seized with fits of insanity as well as individuals?" and in response to the reply, to add, "Nothing but this principle, that they are liable to insanity equally at least with private persons, can account for the major part of those transactions of which we read in history." The amiable yet sharp-witted Berkeley has drawn a lively portrait of the freethinker of his time, which, with certain inconsiderable changes, finds its exact counterpart in the advanced thinker of our own time. Niebuhr, the leader and almost creator of modern historical criticism, recognized the atheistic unbelief of his own day as worse than insanity, — as almost a demoniacal frenzy.

It avails but little, however, to refer to Butler or Berkeley, or even to Niebuhr, with the old-fashioned notions about Providence and prayer and moral retribution which he so obstinately retained along with his new theories of the philosophy of history. The advanced critics of our time are characteristically averse to any comparison of old times and old thoughts with the events and thoughts of the present. Butler and Berkeley, in the opinion of many, have been altogether left behind by the prodigious advances of modern science, and the deeper insight of modern philosophy. Development and evolution are no longer used in the high spiritual significance in which Niebuhr employed these terms. It is only as these terms have become wholly materialized by Comte

and Spencer that they are accepted in the most modern philosophy.

The authority of Butler has not only been set aside, but, by the dexterous use of modern dialectics, it has been shown that the cumbrous and old-fashioned battery which he contrived for the defence of Christianity is capable of being used with deadly effect by the new-fashioned assailants of theism. And, as for Berkeley, the new atheistic materialism is ostentatiously Berkeleyan in its creed,—using the very arguments which Berkeley devised for the annihilation of matter to demonstrate that spirit and matter are in substance but one.

Leaving the times of Butler and Berkeley to themselves, with their historians and critics, and returning to our own, we cannot deny the fact that a collapse of faith has befallen us in a somewhat peculiar and a very formidable fashion. Its most alarming feature is this, that, whether reasonably or unreasonably, men of knowledge and culture are so extensively taking it for granted that Christian theism, in the essential truths of personality in God, responsibility in man, and the providential and supernatural conduct of human history, is doomed to vanish before what is called modern science and culture. They do not all affirm that this collapse will be final. But they find unmistakable and alarming indications that it is making rapid progress among thinking and cultivated men. We could cite many arguments and concessions to this effect from numberless essays and criticisms proceeding from very able and discerning writers, who represent various schools of thought and feeling. This conclusion is held, indeed, in various forms,—by some in the form of a fixed and logical conclusion, by others as a gloomy and unwelcome foreboding, by others as a shivering misgiving, by others in

a spirit of sorrowing but patient fortitude, by others in a temper of frivolous refinement, and by others in a mood of malignant recklessness or despairing pessimism. But, in every quarter, there is alarming evidence that a positive and scornful contempt of Christian theism as a doctrine and a life, a desponding or malignant disbelief in its truth, and a more or less assured confidence in its downfall, have become more or less definitely the creed of many young men in England and America.

We propose to examine the reasons for these conclusions, in whatever form or spirit they may be held, and whether by the friends or the foes of the Christian faith. To give greater definiteness to our theme, we would propose the definite inquiry, whether faith has in the last century gained or lost in the argument, and especially whether, under the critical and confident attacks which are peculiar to the present age, her cause is weaker or stronger at the court of the last resort, — the court of the sober second thoughts of considerate and competent men. By the argument we do not mean the argument as viewed in the light of a rigid and dry logic, but in the actual hold which the truths in question have gained and are likely to keep in the convictions of the present and the next generation. We are prepared to concede, that in no century since the Protestant Reformation have the opinions of believers in Christian theism been modified in so many particulars as during the present. And yet we would contend, that in spite of these changes, and in many cases in consequence of these changes, faith in Christian theism and all which it involves never stood so strongly on grounds of reason in the minds of those who accept it as true, and never could urge so many arguments in its defence. Our position implies, that we do not accept as

final the confident, and, in a sense, the honest unbeliefs of not a few scientists, who may be narrow in proportion to their eminence. Nor are we convinced by the *a priori* assumptions of pantheistic or agnostic philosophers by profession, nor by the logical deductions of any school of critics who in their theories and interpretations of human history deny the possibility that God can direct or interfere with it as puerile or fanatical. We do not sympathize with the supercilious tone of that literary criticism which is moved by no fervent sympathy with those views of duty or spiritual aspiration which are characteristically Christian, whether Christianity be true or false. While we recognize the force of all these classes of negative arguments and prepossessions, we find stronger reasons for rejecting than for accepting them. While we would do the amplest justice to the considerations which induce so many to adopt negative conclusions, and while we sympathize with the alarm which is felt by so many honest inquirers after truth lest the foundations of faith should be destroyed, we would re-assure them and re-assure ourselves with a brief survey of the argument for and against the Christian faith as it stands at the present time, under the several heads to which we have referred.

1. It will be conceded by common consent, that what is called *modern science* should be considered first of all, as well for its intrinsic claims to attention as for the confidence with which its authority is appealed to. We are also compelled to connect *philosophy* with science; because, by a *naïve* and therefore pertinacious effrontery, modern science claims to have become a philosophy, and as such to furnish materials and to dictate the principles, methods, and laws for every department of special investigation. Even when science ignores and

denounces metaphysics and speculation, it unconsciously sets up and uses a metaphysics of its own; though this is often nothing better than a transformed and amplified physiology or physics.

Connecting for these reasons science and philosophy together, we propose, as our first inquiry, What effect upon the great argument before us has been wrought during the preceding century by the changes in each and in both, whether considered separately or as one? We limit our view to the last century; because, with the exception of the Newtonian physics, terrestrial and celestial, modern science in every one of its divisions has been the growth of this period. Within this time also every variety of metaphysics, including the transfigured or rather the disguised physics of which we have spoken, has had its ardent representatives and devotees.

Going back a little earlier than a century ago, we find that in 1770 the "*Système de la Nature*," by Baron Von Holbach, very generally attracted the attention of the philosophers of Europe, and claimed to express the ultimate and prevailing thought of the age. It was grossly and avowedly atheistic, painfully but not brilliantly imaginative, violently and contemptuously arrogant with respect to any and every form of religious faith and feeling. It called forth at once the indignant protest of Voltaire, who represented the reasoned deism of the logical school; and subsequently the passionate remonstrances of Rousseau, the founder and leader of the sentimentalists. Far gone in its negations as the new illumination of science and philosophy had proceeded, it had not gone far enough to respond with distinct and full-mouthed assent to Von Holbach's outspoken and defiant assault upon theism. And yet this writer in a most important sense had the argument of his time on his side. He commanded the assent of

the hour. Against his logic, whether weak or strong, whether it were the logic of science or sentiment, Voltaire's ingenious protests and Rousseau's eloquent appeals could avail but little, and that little but for a little while. When we say he had the argument, we certainly do not mean that he had the truth on his side, but that all the logic was on his side which was provided in the principles and premises which were currently recognized by cultivated men as constituting the science and philosophy of the times. To use a current if not a cant phrase of our time, Holbach and his gospel of atheism represented the *Zeit-Geist* of 1770; and therefore it carried the day.

The "Système de la Nature" has little meaning and less force for thinkers of the present generation. The few who read it now, read it as a philosophical curiosity. It is wholly disregarded by fresh and earnest seekers after truth. This is partly owing to its defects of style, and to the abundant use of its verbose and flowery rhetoric in place of soberly reasoned deductions from accepted principles. A better reason why it has lost favor with the present generation is, that its science is antiquated; having literally been left behind in every point of detail by the rush of discovery and experiment since 1770. The modern reader of this old argument, if argument it may be called, is therefore compelled to read it over against a background of assumed scientific truth which has been exploded or outgrown. Or, if it is not wholly outgrown, in place of what was a scanty and shadowy framework is seen a finished and elaborate structure of verified forces and laws. The scientific reasoner of the present day literally lives in a new physical and spiritual universe, with its correlated forces, its formulated laws, and, above all, with its long history of developed progress, which promises a still

more imposing future. Splendid as were Holbach's fantastic dreams of the undeveloped forces of nature, he did not anticipate the half of what has since been realized of her then undiscovered capacities and her correlated laws.

Two treatises of the present day may not unfairly be taken as representing the fullest expression of the negative attitude of modern science with respect to theism. The one is *atheistic*, the other is *agnostic*. Positive atheism is taught in "A Candid Examination of Theism," by Physicus. The theory of agnosticism, or agnostic atheism, is expounded at length in Mr. Herbert Spencer's "First Principles." The first is a reasoned argument to the conclusion that modern science, by its discovery of the doctrine of the conservation of force, finds no occasion whatever to believe in design or in God. The introduction to the second professes to prove, that, while modern science finds reason to believe that there is an Absolute, it finds equal reason for denying that this Absolute can ever be known. Both these writers seem at first thought to have an immense advantage over Von Holbach in the vast and imposing additions which modern science has made to our knowledge of verified facts, and to our stock of stimulating and quickening theories. A close examination of each will show, however, that neither of these gains, nor both together, have made the logic of the new atheism or the new agnosticism a jot more convincing than the logic of the old. They have neither added a single new link to the old chain, nor made a single old link stronger than it was before. They have neither introduced a new method of using the old facts or the new, nor weakened in any particular any of the old methods of inference, or any of the old grounds of belief. The new universe of modern

science has, indeed, become immensely expanded to man's certain insight, and been made immeasurably more impressive to his instructed and quickened imagination. Its spaces stretch out in every direction before the eye in immeasurable tracts, which the imagination falters in its attempts to traverse. But the instructed eye finds in these most distant provinces examples of order, beauty, and goodness as brilliant and overwhelming as in those which are near. New agents have been discovered in the far and the near, the products and actings of which have made science familiar, even to uninstructed minds, as the minister and magician of art.

It would seem at first that these brilliant discoveries, these verified facts, and these determined laws would have made the old theory of a self-existent, creating, and loving Intelligence more necessary and more acceptable to the scientific intellect. At the least, we might conclude that the logic of atheism would find no advantage in modern science above the logic of theism. Such at least is the judgment of the unsophisticated intellect when first confronted with the facts and relations which modern science reveals.

It becomes, therefore, a question of more than curious interest, by what processes of intellectual legerdemain has the new atheism become so plausible, and by what subtle transitions of thought have the atheistic and agnostic theories so largely taken possession of the *Zeit-Geist* of the present generation. The strength of these theories and the likelihood of their endurance may be estimated by a brief review of their history, involving as it must a critical judgment of the logical value of the steps in the processes by which they have grown into such gigantic proportions and been applied to such appalling conclusions.

The least informed of the students of science is not ignorant that the so-called galvanic force, originally a product of the subtle chemistry which was almost unknown in 1770, has enabled us to excite and regulate in various ways that molecular action of which we so glibly speak, but which we very imperfectly understand. We have gone so far at least that we can talk by threads of metal beneath and athwart the sky. We have learned, by processes as simple as they are daring, to interpret the constituents of the nearest and the remotest of the stars. Many of the forces and agents which we had counted as diverse we have learned to regard as one. We can even convert the one into the other backwards and forwards, forwards and backwards, till they seem to assume the arts and ways of a mocking and mischief-loving Proteus. And yet we have learned to predict and trace these arts and ways so far as to have found the expression and condition of each form of force in some mode or rate of molecular action. Molecular action, again, we have connected with the motion of masses, and to this have found affinities in the undulating light and in the supposed pulsating and heat-bearing ether. We have concluded, by legitimate theorizing, that the so-called physical forces are correlated by a common measure or by mensurable motion, and that the agents or atoms which defy the discernment of the senses, whether differing in quantity only or also in quality, do yet perform their several functions after common relations of number and proportion.

We have learned far more than this. The observed interchange of material forces very naturally enforced attention to the possible interdependence and reciprocal action of the constituents and agents of the physical universe. It has forced science to recognize the uni-

verse itself as an organism of co-acting and conspiring parts, each of which must act with and upon all the rest, and in turn be acted on by each and all, in order that any one may perform its humblest or its noblest office. This relationship, which had always been more or less distinctly recognized in the sphere of life, and which has given its plausibility and charm to pantheism in its grosser and more spiritual forms, had struggled almost in vain to find a place within the domain of the inorganic, until the doctrine of the correlation of force flung the door widely open for its admission. This gave it authority and prestige with a class of scientists who would otherwise have rejected it as utterly strange to the traditions and axioms of the mechanical philosophy. With organic relations, a way was also opened for development or evolution. These were first limited to the familiar processes of the growth of living beings from simpler to more complex forms, and from humbler to nobler functions. For this progress some definitely working agency must be subsidized, and some semblance of law and regularity must be provided; and forthwith heredity, and tendency to variation, and the struggle for existence, and natural selection, emerged in succession upon the arena, all being summed up under the general title of evolution. Some of these forces or laws were hospitably admitted within the temple of the new physics without the tests and passwords usual to science, of verification by induction and formulation through laws. They have certainly enriched our scientific vocabulary, if they have not added to the definiteness of our scientific conceptions. They have immensely stimulated if they have not completely satisfied the scientific imagination.

But the entire history has not yet been told. At a somewhat early stage of this history which we have

traced, palæontology had begun to read in the records of the remoter ages an undeniable testimony to progress and development of some sort, such as would be altogether consistent with the working of the law of evolution, so soon as it should be hypostasized as an agent or force in the way already explained. Plausible analogies suggested themselves between the development of living germs into complicated organisms, and certain mechanical changes in form, structure, or orbit. These, again, were assumed to have been provided for in some original impulse of motion, which it was conjectured might involve the development of the several forms of molecular activity which were required to account for the phenomena of heat, light, and color, etc. Very suddenly — all at once, as it were — our scientific dialect is enriched by three separate conceptions used in swift and unnoticed interchange with one another; viz., *development* mechanically viewed; *evolution* in the organic sense; and, last of all, *differentiation*, — a purely logical relation. These three, as we have said, are used interchangeably by many scientists, and not infrequently are inextricably confounded. Similarly, mechanical accretion, structural growth, with a capacity for special functions, and logical integration, were included under one indiscriminate generalization. Last of all, by one gigantic leap of personification founded on a most comprehensive analogy, the progressive movement of evolution was exalted as at once the originating force and the ultimate law of all being, whether living or dead, whether material or spiritual, and crowned with all the glories which had formerly been accorded to a self-existent and intelligent person, but are now transferred to the unknown and unknowable Absolute.

These wide-reaching conclusions, it should be observed, are claimed by many to be severely and strictly

scientific. There are, indeed, many scientists — we trust they are very many — who know that some of them are nothing more than simple hypotheses, and as such belong to pure philosophy. They are none the worse for this reason, if they are only recognized as mere speculations. Their claims to acceptance or authority should be firmly resisted whenever it is claimed that they have been demonstrated or verified as scientific truth.

Historically considered, the theory of evolution can be shown to have been, not only speculative in its origin, but theistic in its assumptions and tendencies. The physics of the last century knew nothing of organic interdependence, much less did it know any thing of organic evolution. It was the mechanical philosophy of Descartes and Newton which furnished the premises from which the atheism of Von Holbach was reasoned. It is true he insisted on the distinction between dead and living matter, but his living matter was only matter in motion. Our modern creative evolution and the unknowable Absolute would never have been thought of had not Kant for the second time introduced the element of organic relationship with its implied theism into the arena of physics and metaphysics, and this just at the moment when chemistry, physiology, and palæontology stood ready to give to this more elevated medium of interpretation the sanction of their splendid and almost bewildering discoveries. It follows that the new atheism of Physicus and Spencer builds on a philosophy which is essentially spiritual, if not theistic, in its assumptions.

Leaving this point, as tempting us aside from the right line of discussion, we proceed to inquire whether the science of to-day, with its splendid discoveries and its magnificent generalizations, and the philosophy of

to-day, with its organic relationships and evolutionary progress, are any more demonstrative of either atheism or agnosticism than were the science and philosophy of a century ago, as represented in the "System of Nature." For convenience we separate the atheism of Physicus from the agnosticism of Spencer.

The first point which we notice is, that the doctrines of the indestructibility of matter and the persistence of force, on which Physicus relies to set aside the necessity of a self-existent creator, are purely scientific conceptions, and as such pertain only to the finite universe. These ultimate generalizations are as truly limited propositions, and only concern a limited subject-matter, as do any of the special scientific conclusions which can be deduced from either. The fact that they explain every physical phenomenon by a general affirmation of the force or the law which holds of each, only makes them more wonderful and comprehensive than the phenomena which they explain; but it does not for this reason take them out of the realm of the finite. If a scientific ultimate can satisfy the mind, remaining finite, as the scientific atheist contends it must be, in order to be understood and assented to, then the creed of an atheist of the school of Physicus must be, I believe, in indestructible matter, or in persistent force, in extent m , in powers n , and in laws r , all finite. So far science conducts him, and only so far. The instant he affirms any or all of these finites to be self-existent, he leaves the domain of science, and steps over the boundary which divides it from the region beyond, whether this be called the domain of philosophy, or the domain of faith. He does the same when he assumes the position of agnosticism pure and simple; i.e., when he will neither affirm nor deny that man can know any thing besides. Physicus himself confesses that his

elaborate attempt to demonstrate that modern science can dispense with God, only carries us to the bounds of the finite, to the *flammanitia mœnia mundi*, and that his magic formula of the persistence of force, and the indestructibility of matter, are purely scientific doctrines, which concern the finite as we find it, and go no farther. He frankly admits, that metaphysically a self-existent infinite is supposable; i.e., it involves no inconsistency with scientific principles, conclusions, or experiments. With his purely metaphysical arguments for and against such an Infinite, we have at present no concern. We are interested only in the question whether the position which he so triumphantly urges has any force, that modern science has enabled us to dispense with a self-existent infinite by reason of its axioms or discoveries that matter is indestructible and force is persistent, — whether, in brief, the new atheism of Physicus has any advantage over the old atheism of Von Holbach. We find that the universe of each is a finite, and only a finite. So far as either is claimed to be self-existent, it is claimed to be so, not on grounds of science, but of philosophy or faith. More is known of the extent, the powers, and laws of the new universe than of the old. But we look in vain for the slightest evidence that the universe of matter and of spirit as known to the scientist of 1881, with its forces and its laws, with the history of its evolutions in the past so distinctly recorded, and its prophecy of the developments of the future so clearly revealed, is, on grounds of philosophy, any the less dependent for its being and its order on a self-existent intelligent originator than the universe as known to the Encyclopædist of 1770, when as yet there was no chemistry, no geology, no spectroscope, no Darwinism, and no Herbert Spencer.

Herbert Spencer, as all our readers should know, takes a position entirely different from that of Physicus in respect to the Absolute or the unknowable force. He is not content with arguing back to the reality of such a force, on the grounds of science, nor with showing that indestructible matter and persistent force are interchangeable conceptions; but he is moved in his "First Principles" to inquire whether there is not or may not be, besides, an unknowable object of faith and worship. Confounding in his sudden zeal the scientific or unformulated unknowable (still finite) which evolution supposes, and which reveals itself in manifold phases or effects under changing and progressive conditions and laws, — confounding this with that metaphysical Absolute which theists had so long ignorantly worshipped in the form of a personal God, but which the new apostle solemnly says, *I now declare unto you*, and being especially moved with concern that Hamilton and Mansel should have been so rash as to deny the great Unknown whose altars are found everywhere, — he proceeds to construct an elaborate argument to prove that such a metaphysical Absolute exists. He finds evidence that it exists in that religious or metaphysical faith which is common to the race, and is continually reaching after the *not-finite* or the ultra-scientific. The evidence that he is unknowable he finds in the general truth, that all *finite* force or matter is unknowable in its essence, and is only known by its manifestations or effects; and therefore, by analogy, or some sort of *salto mortale*, he concludes that the *Infinite* and *Absolute* beyond cannot be known. Q.E.D.!

We have considered these theories in detail, that we might satisfactorily answer our main question; viz., whether faith in a self-existent and personal God is in danger of final collapse because of the discoveries of

modern science, and especially by reason of the general popularity of the doctrine of evolution. We have compared the atheism of Von Holbach, so far as its logic is concerned, with the atheism of Physicus and the agnosticism of Spencer. We submit the question, whether atheism has gained any thing in its logic during the past century from the wonderful discoveries of modern science, or from the suggestions which these discoveries have made to philosophy. The thought may occur to some, that argument does not always win. We reply, that, if argument does not win in science and philosophy, nothing else can. We believe that argument always wins in the long-run, and that this was never so true as at the present time, when criticism was never so sharp, and critics were never so numerous.

The temporary popularity of an imposing and ambiguous formula is no new event in the domain of science or philosophy. The only security or remedy against it for either scientists or philosophers, is that both should become better logicians, and never fail to remember that A is always A, and A can never be self-evolved into not-A. Let these time-honored rules be but faithfully applied, and it will soon be discovered that both atheistic and agnostic evolutionism are products of a natural tendency in speculative men to hypostasize logical abstractions into real agents. If the same agent under varying conditions produces varying effects in any fixed order, these effects can very easily be conceived as developed from the agent which begins the series, provided the order be fixed, and the phenomena are more and more varied and complex as they proceed. By the aid of modern science we find this progressive and intelligible order more and more signally manifested in the structure and past history

of the universe itself, indicating and implying a plan which no single scientist can grasp, and a history which no finite mind can remember or interpret. Science, moreover, being impossible without definition and classification, the moment we begin to think, we aim to discover those forces and laws which are the most comprehensive. These we naturally place highest in our logical scheme; i.e., first in the order of our explanation, as we follow the geometry, the thinking, the history, and the progress which all science unconsciously assumes must control the universe. We project on our logical maps, and draw in our scientific sketch-books, a hierarchy of conceptions, constructing our frameworks of outlined *abstracta* according to our theory of nature's operations and their rationalized order. Into this diagram we write as fast as we may our hierarchy of genera and species, of families and varieties, as fast as observation or experiment will warrant. As our logical tree is developed under our hand by twos and twos, in ramifications and sub-ramifications, it is not surprising that we poetically imagine that the genus *originates* the species, and the species is *transformed* into the variety by an inherent force belonging, not to the individual agent, but to its abstract counterpart. Finding, moreover, in the world of life of both plant and animal, that the boundary-lines which we had drawn between kindred species are neither so definite nor so rigid as had been supposed, we necessarily correct our observations by ascribing to the organic power of the individual agents, whether material or spiritual, a greater flexibility to varying conditions, and to environment a corresponding modifying power. Finding also in the progressive history of the generations of life ample evidence of progressive variations from simple to complex forms,

with corresponding advances from lower to higher endowments, we necessarily accord to the original germs or molecules, whatever these may be, a sensitiveness to varying circumstances such as had never been dreamed of under the old hierarchies of genera and species. When, with these results, we go back again to our familiar and time-honored logical schemes, it is not surprising, that by an unconscious hypostasis we ascribe to the logical genus or species the capacity of perpetually differentiating itself into sub-species or varieties, and of fixing these results in more or less stable subordinates; or, conversely, that we assert for individual agents a limitless and planless capacity to affect and be affected by their fellows. Hence have originated two forms of development or evolution. Hegelianism was first in order, which, out of the splendid poetry of Schelling, constructed its logical universe by the development or evolution of every form of the concrete by means of the self-moving and self-differentiating power of abstract notions; beginning with being, and ending with the most complicated agent which is destined to exist in nature, and the most consummate event which shall occur in history, uniformly finding a self-existent Infinite in the organic total of the whole that has been, and is, and is to be. Next emerged materialistic evolution, which begins its apparently infinite, yet actually finite, cycle with the seemingly impotent and unpromising star-dust which has within itself the potency and promise of all the highest forms of life, and ends with the completed possibilities of these wondrous agencies in a universe that signalizes its finished perfection by falling into a chaos, in whose ruins are certain to be found the elements of renewed development and order. These two forms of evolution, the logical and the biological, are alike in their genesis

and their essential features. The logic of both is substantially the same. The Hegelian or metaphysical evolutionism has had its day. Though it has not ceased to exert its special fascinations upon men of special culture, it has lost its power to dogmatize in the name of either philosophy or science. Biological evolutionism is at present especially noisy and pretentious, and claims to furnish both foundation and method for every science of nature and of man. The first saves both philosophy and science, but sinks man's free and personal life into the abyss of logical necessity. The second subjects, not only personality, but science itself, to the uncertainties of blind materialism. For the time, materialistic and biological evolutionism will doubtless have special fascinations for men of limited culture and dogmatic temper. It is our belief, that so soon as the logic of time shall convince those men who know how to reason that this form of evolutionism not only destroys faith, but strangles science, they will reject it with contempt, if not with abhorrence.

But, while we contend that logic in the long-run is destined to win, we concede that many other elements decide the question whether it will conquer sooner or later. The convincing force of an argument or theory is one thing, and the conviction which it produces or fails to produce is another. We may not judge of the strength or weakness of faith in a community or a period solely by the logical strength or weakness of its accepted philosophy. In former times, says Coleridge, principles were better than the men: nowadays the men are better than their principles. This is as true of the actual as contrasted with the theoretic faiths of men as it is of their characters as compared with their creeds. We find abundant reasons for believing that many scientists and philosophers are by no means so

atheistic or agnostic in their actual thinking as their speculative avowals and reasonings would seem to imply. There is certainly no lack in the confidence, if it be not sometimes the bravado or effrontery, with which the agnostics of our time propound their conclusions, and their reasons for holding them. The coolness with which they assert that the new doctrines solve all the mysteries of matter and spirit, of life and organization, and the confidence with which they dispose of creation and design, are equally refreshing. The bravery also with which they profess their readiness to accept any martyrdom for their most hallowed convictions to which they may be called by their loyalty to science is also imposing, if it is not inspiring. We observe a difference, however, between the outspoken and plucky antagonism of the old materialistic atheism and the half-reluctant consent which many of our negative thinkers affect as they accept the conclusions to which science compels them, or the blushing euphemisms with which they utter their half-extorted confessions of unbelief or blasphemy. The imaginative mysticism with which the new atheism drapes the hideous idols of negation is another indication that the scientific unbelief of our day is less hearty, less positive, and less self-satisfied than were the coarser and rougher denials of other times. These phenomena are not difficult to be reconciled with the more accurate knowledge and the higher cultivation of the times in which we live. They are exactly what we ought to look for in a period distinguished by intense activity in limited spheres of observation, and sagacious and splendid generalizations within the wide ranges of hypothesis and speculation. The habit of careful observation engenders confidence as well as caution. The successful confirmation of a few happy conjectures may inflate to a romantic reliance on

the most improbable hypotheses. In this way the sense of obligation to logical coherence may become gradually relaxed, the judgment concerning the true and the real be enervated, and the universe of tremendous fact be transformed into any unreal phantasmagoria of speculation which may illustrate or confirm some newly broached imaginative theory. Faith in moral and religious truth, on the other hand, though intellectual in its activity and its grounds, is, in its very essence, intensely realistic and practical. It is not necessarily carefully adjusted, even by men of high intellectual culture, to their scientific or philosophical theories; and hence it is not always helped or hindered by either so seriously as would seem to be inevitable. The fact is certainly unquestioned, that orthodox and even ultra-orthodox Christian believers not infrequently accept a theory of the universe which is utterly atheistic or agnostic, or a doctrine of man which is hopelessly materialistic, with little or no interruption to a fervent Christian experience.

2. This distinction between the logical and practical faiths of men forces itself upon our attention as we proceed to our next topic, and inquire what we ought to think of the *ethical theories and tendencies* of our times. That many of these theories are eminently dangerous and destructive no man can possibly deny. Viewed from a purely logical stand-point, nothing seems more clear than that every theory of ethics which is derived from materialistic evolutionism must deprive moral obligation of its permanence and sacredness. The utmost that any can do is to enforce the most sacred duties of life, by associations which are confessed to be factitious in so far as they are creatures of social forces. Every such theory must resolve the authority of duty

itself into the right of the strongest to compel by the bayonet when directed by science and wisdom, or by the shouts and jeers of an ignorant and brutal mob. It finds the original rudiments of conscience in the dread of the war-club and the bludgeon. "The imperious word *ought*," says Mr. Charles Darwin, "seems merely to imply the consciousness of the existence of a persistent instinct, either innate or partly acquired." A matured and cultured conscience is only that inextricable web of associations which society weaves about every one of its members for and against the impulses which it chooses or finds necessary to encourage or repress as society rises or sinks. These associations form the conscience of the individual into a swift witness *against*, or it may be *for*, murder and lust and violence. The law of duty, supposed by the older atheists and deists to be written upon the heart of man so clearly as to need no enforcement or authority from the voice of God, is now held to be written on the brain through physiological agencies, which, when hardened by social repetitions, are transmitted by the hereditary force of a thousand generations. It is assumed, indeed, that this social movement must be upward and onward, — from the lower to the higher, from the worse to the better, — but without reason. These theorists seem never to have asked themselves, and no reason is provided in the facts and analogies of their system, why some interruption of development may not produce a single brain of mighty force, seething with the impulses of murder and lawlessness, which shall break the law of heredity, and cast out the better conscience from its brain-shell, and proclaim to the willing multitude some new code of license in the name of some newly developed theory of property, the state, or social order. The advocates of the new ethics are professed logicians and practised reasoners, who

pride themselves on their coherent thinking, and the unflinching courage with which they adhere to the logic of their convictions. And yet they show no timidity for themselves or their fellows lest these consequences should be acted out in some drama of terrific horror by men whose associations are not yet rightly or strongly adjusted, or lest a new code of scientific communism, murder, and lust should be thrust up into their own lecture-rooms from the hell which lies beneath, or be enforced upon the community by the law of the bludgeon, or the shouts of a maddened public sentiment. Spectators and critics who do not accept these opinions are filled with alarm as they follow out the logic of these new ethics, for to them the logic seems as direct and as cruel as the ball of the rifle towards its mark. But their advocates and exponents are as cool and unconcerned about these or any consequences as if they were tracing the path of a blank cartridge, or the orbit of an asteroid. The story is credited of Voltaire, that, on a certain occasion, the conversation at his table was becoming somewhat free in respect to God and immortality, when he suddenly rose, and locked his servants out of the room, saying that he did not care to be murdered or robbed as the consequence of the free theories which might be expounded in his own house. Our modern theorists would esteem such a precaution eminently unscientific and puerile. Even the atheists of the last century held with a sort of fervor to permanent laws of nature in favor of temperance and kindness and courtesy, which enabled them to dispense with God. But the atheists of the modern school make duty to be the chance and changing growth of a society of humans who have slowly struggled upwards from brutes to men, and may at any moment exalt into a law of duty what strain of brute or devil still lurks in their blood.

We think it right to argue, that, were the faith of the new theorists as earnest as it purports to be, they would not and could not be so indifferent as they are to these possible consequences. It would seem that they must inevitably recoil from them with terror for themselves and for their kind. It would scarcely be courteous to assert that they are not serious in holding their premises. It would be positively discourteous to insinuate that they do not understand the necessary conclusions of their own logic. How, then, may we explain the fact, that they either do not forecast or do not fear the practical consequences to which their premises lead? A partial explanation may be found in the suggestion, that scientific speculation in these times seems to be practised in some sort as a species of diversion, or exercise of ingenuity, — a setting up of one hypothesis against another in the way of logical pastime, with now and then a flight of poetic enthusiasm enlivened with a sharp hit, not always in the best temper, against theologians. If this is true, speculation has become less dangerous to practical faith in duty, simply because it is less earnest as it becomes more audacious, — seeming more brave, in proportion as it lacks the courage of its own convictions.

Another and more satisfactory solution is found in the fact, that ethical truth shines so clearly by its own light, and stands so strongly upon its own foundations, as to be regarded by theorists of every description as practically unassailable. Even the advocates of the most destructive theories justify their audacity by the secret conviction that moral truth in the long-run can never suffer from any assault of science. Accordingly, not a few reasoners, who pride themselves on the rigor of their logic, and the sharpness of their analysis, take refuge from their own deductions in some convenient shelter of faith or feeling. They would fain save their

faith in duty from the scientific assaults which they themselves make upon its supremacy, by some special *Te Deum* of sentimental worship in their private chapel of common humanity or common sense. We do not defend the reasonableness of this divided allegiance. We simply notice the fact as explaining how faith in duty can be made to survive the destructive influence of the most dangerous theories, and why active religious convictions seem to be able to exist in some minds along with an anti-religious philosophy. We are forced to adopt some such theory in order to explain some of the strange incongruities of our times. In this speculative age many believe more earnestly in duty and in goodness than their theories provide for, and seem to hold their shallow and destructive ethics more as exercises for scientific ingenuity than with the spirit of martyr-like or even of manly conviction. The negative theories of morals which are so zealously defended would be more dangerous were the disbelief more positive and earnest. Scientific frivolity, however, is a poor excuse; and yet it may be the best excuse which can be given for the unbelieving and destructive ethics of the day.

3. Leaving the unbelief of the agnostic and materialistic types, with their ethical corollaries, we proceed to those forms which question or lower *personality in both God and man*, and inquire how strong is the hold which they have upon the speculative and practical thinking of the present generation. Under this grouping, pantheism and naturalistic deism are placed side by side, so far as the doctrine of God is concerned. So far as we have to do with man, and God's relations to man, the supernatural is excluded alike by each. Miracle, inspiration, providence, prayer, personal sympathy and help from God, are all rejected, or vaguely and faintly

believed. The questions which we propose to answer are these: Has the alleged collapse of faith proceeded farther in these directions in the present generation than ever before? or, on the other hand, are there signs of recovery and re-action? In reply to these questions, we cannot deny that faith in the divine personality has been greatly weakened by the indefinite haziness into which the idea of God is resolved by the pantheistic metaphysics, or overlaid by pantheistic imagery. The same result has followed the remoteness of distance to which the Supreme is removed by the complicated machinery of forces and laws which the deism of the mechanical physics interposes between man and his Maker, or the unfeeling indifference to human interests which Epicurean culture and *dilettanteism* ascribe to the Deity.

But when we ask whether pantheism or deism or Epicureanism are stronger in evidence or argument than they were in the last generation, or are rooted more firmly in the rational convictions of the thinkers of the present day than in days gone by, we find no evidence that either is true. There are signs that the bewildering wonder evoked by the pantheistic metaphysics is giving way to a soberer and clearer philosophy of the Infinite. The imaginative tendency which was satisfied for a while with the brilliant turnings of the kaleidoscope is beginning to find the sharp-cut visions of the telescope more restful to the eye. In the judgment of the cool and well-instructed intellect, personality, in both Creator and the created, ranks higher than any quantity of matter, or energy of force, or complexity of laws. It is now more than suspected that the intelligent direction of forces to definite ends is a nobler function than the unconscious subjection of the all to either blind force or uninstructed law. Self-existence is

less of an offence to the clearest and coolest intellects when affirmed of a Person whose resources are within himself and consciously known to himself, than when affirmed of unnumbered particles of star-dust which happened to find themselves together in such relations as to constitute a cosmos in embryo, with the promise and potency of a wondrous history. A Deity who is capable of sympathy and care for beings who, in turn, can remember or forget him, stands far higher in dignity, and is far more worthy to be believed in, than a something or somewhat who is too imbecile or too dignified to respond to the longings of the human heart. It would seem that it is beginning to be discovered that the pantheist has exhausted all there is of argument in the assumption that Infinitude excludes any division or separateness of being, or in the vastness of the finite as revealed by modern science, or in the mystery of any organic dependence and activity by which parts and wholes share and contribute to a common life. The deist of the mechanical philosophy is becoming rather tired of a God who, having made and continuing to uphold the universe, and after an intelligent plan, is condemned to be a mere inspector of its workings, with no opportunity for that personal agency which begets personal trust or submission or comfort or hope. A special providence, and a prayer-hearing and prayer-answering Father in heaven, would bring some relief from the stupidity and tiresome monotony of a god so limited and inert. Even the Epicurean *dilettante* is so desirous of a new sensation as almost to be ready to welcome it in the form of the hope of a heaven of established holiness, even if joined to the fear of a hell of matured and energetic depravity.

We do not contend that there is any general or formal abandonment of either the pantheistic or the

deistic theories of the universe. We are also aware that the pre-occupation of so many of the active-minded thinkers of the time with physical theories of society and history has had something to do with the ebbing tide of pantheistic and deistic theologies. We do not assert that the one class of these theories is greatly to be preferred to the other. But we find evidence that the logic of neither is invincible, if men of similar gifts and culture so readily exchange the one for the other. We find also reason to believe that the truths which have satisfied the speculative and practical wants of many generations will gain a more favorable hearing, and a kindlier reception, so soon as the tide shall begin to recede, as it surely will, from an atheistic science and philosophy. The clearness and severity of the processes which are enjoined in the physical sciences, the exactness of definition, the severity of crucial experiments, and the demand for general consistency with the experiences and observations of common life, are rapidly disciplining the present generation to habits of judgment and reasoning which are favorable to a philosophy which finds room for personality in man and the Deity, and which, with personality, opens the way for personal worship and communion between living men and the living God.

4. But let all this be conceded, and let us assume that the old faith in God's personality and providence may again resume its place in the schools of philosophy and science, what shall we say of the old faith in the *supernatural of the Christian Scriptures and the Christian Church*? Is not faith in the supernatural, and even in the providential, of actual history becoming weaker and more vacillating than ever? And has not the new historical criticism given such deadly blows

to the *naïve* confidence of men in the miraculous element of the Hebrew and Christian Scriptures, that it must needs fall into a fatal collapse, from which it can never again revive? Is it not as obvious as it is true, that, from the days of Lessing to the days of Kuenen, the traditional confidence of the Christian Church in the Hebrew and Christian miracles has been gradually giving way before the searching scrutiny of scientific criticism until less of it than ever remains among leading scholars, and the little that survives is asserted in propositions of more indefinite vagueness and feebler energy than ever before? While it may be true that supernaturalism as a possible theory is coming more into fashion, — and not always to its honor, — are not Moses and Jesus fast becoming thoroughly *naturalized*, and by critical tendencies which cannot be resisted?

Of these assertions, and the facts on which they rest, the following may be taken as a truthful estimate. It is doubtless true, that within the present century scientific criticism has been applied to every description of history as never before; and from this scrutiny sacred history could not and ought not to escape. While it is by no means true that sacred and critical learning were previously unknown, and while it perhaps might be shown that every one of the newest destructive theories had been broached and defended by earlier critics, it will not be denied that the learning of the last three generations, especially in history and philosophy, has become more exact and scientific, and consequently more trustworthy, than ever before. A keener historical discernment, a more just and vivid imagination, and a more penetrating insight into causes and principles, have certainly been applied to all historical conclusions, whether the subject is sacred or secular. As a consequence, the old admiring credulity with which ancient

life and ancient men and ancient institutions were almost worshipped, as something grandiose, if not superhuman, has been abandoned, if not shamed out of sight. The old legends have been read into common, if not into vulgar, prose; the ancient myths have lost their gorgeous coloring and their imposing drapery; and the most venerated personages have come down from the lofty pedestals on which they stood like statues, and been forced to try the common, and, at times, the awkward, gait of ordinary mortals. From this severe ordeal the ancient religions have in one sense suffered most, while in another sense they have suffered least. They are no longer any of them accounted for by deliberate knavery and conscious fraud as their sole or chief originators, but are largely explained as the natural and necessary outgrowths of the sentiment of worship as it has wrought out for itself an objective symbolic environment from nature and history. It was natural and necessary, that, as these theories have been successively matured, they should be applied to the Christian history, including the life of Jesus and the origin of the Christian Church, — pre-eminently to the supernatural element in the same, — as possibly natural phenomena. What has been the result? and first on the positive side? In answer to this question we may confidently affirm, that, so far as *the drapery*, or *setting*, of the supernatural is concerned, the confidence of men in its substantial exactness has been greatly increased. The geography, the chronology, the literature, the life-likeness, of the story as we find it, and whatever else rewards the historic sense, or confirms the trustworthiness of the narrative, or connects it with accredited knowledge from other sources, have successfully withstood the ordeal; and the sacred story in all these particulars — the supernatural in it being excluded —

is now acknowledged to be more real and more credible than before. Renan may be taken as in some respects the most plausible of the rejecters of the supernatural in this history; and yet he is the most positive and outspoken in asserting that the Gospels and Epistles, in the perfect verisimilitude of place and time, give the most decisive evidence of their early origin. All negative critics do not agree with Renan upon this point; but Renan has the advantage above them all in being more free from merely scholastic presuppositions, and more open to the broader lights of common sense. For the history of the first Christian centuries, modern criticism has also rendered an inestimable service in sweeping away a vast amount of rubbish in respect to the supposed superhuman intelligence of the early believers, and their miraculous exemption from the frailties incident to their times, and to their inferior position in respect of culture, wealth, and political influence. It has done for the beginnings of Christianity what a good field-glass achieves for a distant landscape: it has made every outline sharp, and every color fresh and glowing, and the whole field of vision vivid with life and reality, none the less, but all the more, because it has forced upon the eye the sticks and stones and mud and gravel, and every variety of disagreeable literalness which a less fresh and realistic vision would fail to represent at all. It certainly cannot be denied, that the new criticism has brought into very distinct and prominent relief the human side of the gospel and early Christian history. But what has it done for the supernatural element? How has that been affected by the new and fresh lights which have been poured upon the past? Has not the miraculous disappeared under the lights which modern science has focussed into these vivid pictures? As the

vague has become distinct, and the dim outlines have been sharpened, and the distant has been brought near, has not the supernatural vanished from the wondrous picture, and "the splendid vision" of our once reverent, admiring faith faded into the "light of common day"? To this question of questions but one answer can be given. Whether the supernatural vanishes out of sight, or stands forth from the picture in bolder relief, depends on the eye which looks upon the picture, more than upon the artist who uses the lens to bring it near. The sharper and more vivid setting of the past simply serves to bring the student of the present century into the immediate presence of the first, and to confront him face to face with the wondrous personage who is acknowledged to be the central figure in the gospel story. It does for him the most that it can; for the frequent wish of the heart and intellect, either expressed or unexpressed, has invariably been, "Would that I had lived in the days of Christ, that I might see him for myself, and judge of him by myself." Modern criticism does this effectively, but it does no more. This is all which it can do, and all which it should promise to do. The literalness, the homeliness, and the entangledness of the natural with the human serve only to bring out more strikingly to the mind prepared to believe the supernatural and the divine in the picture. Over against this background of homely reality, — made more homely just in proportion as it is made real, — the supernatural Christ stands forth in a contrast so striking, and with a relief so startling, that the man prepared to respond says with a depth and fulness of conviction which the new criticism alone could make possible, "Never man spake like this man," "Truly this was the Son of God!"

Moreover, the new criticism has rendered a striking

service to faith by the violent expedients to which it has driven the determined rejecters of the supernatural in their attempts to account for Christ and Christianity on naturalistic principles. These expedients have demonstrated their own unsatisfactory and violent character by their uniform failure to satisfy the critics of more than a single generation. In some instances, as is well known, they have been abandoned by their own originators. The naturalistic theory of Paulus, the mythical theory of Strauss, the tendency theory of Baur, the romantic theory of Renan, and the various mosaics, or, rather, kaleidoscopic pictures, made up of parts of each, have all failed permanently to answer the questions which the new criticism has forced upon the attention of men. They have failed altogether to account for the origination and first triumphs of the gospel story on the supposition that the supernatural in it was false. It would seem as though the entire round of possible negative hypotheses had been traversed by adventurous critics, to say nothing of sundry amazing aerial flights by manifest romancers, and in vain, and as though nothing was left for the rejecters of supernatural Christianity, except to select some one of the many old paths which have so often returned upon themselves, and ended in disappointment and disgust.

We are fully aware that very many of the rejecters of the supernatural in the Christian history remain unconvinced, notwithstanding the confessed failures of these manifold negative theories. We know too well that incredulity in respect to the truth of the gospel history — if it should not rather be called the extreme of credulity — has become a fixed fashion or affectation in many cultivated circles. But we find no special strength, certainly no special novelty, in the arguments which they so confidently urge. Their attitude is not so

much an attitude of conviction as of uncritical dogmatism; and this savors quite as much of scornful self-assertion as of docile and open-minded readiness to revise the fashionable opinions of a coterie, or to rouse themselves to fresh and earnest investigation. Indeed, if to be willing to revise one's creed is a test of the truth-loving and liberal spirit, the anti-supernaturalist critics are generally sadly deficient in this important indication.

The relations of the new criticism to the supernatural element in the Jewish history differ somewhat from those to the gospel story, for the reason that the materials and data in this case are relatively scanty, inaccessible, and uncertain. Sundry important questions may be said to be still *sub judice*, and may remain for a long time undecided. A new and exciting interest has recently been aroused by the startling theories which have found a formal and earnest advocate in Professor Robertson Smith. At first thought, it might seem that if the traditional views in respect to the history of the Levitical system and the authorship of parts of the Old Testament are to be disturbed so seriously as he and his teachers affirm, then the deeper and older foundations in Mosaism, on which Christianity professes to stand, must inevitably give way, and both Mosaism and Christianity as supernatural systems must be engulfed in one yawning chasm of ruin. A second thought reminds us that the new theory seems to require more than any other a continually acknowledged and ever-present supernatural agency with a people whose institutions were capable of constant expansion. The sudden enlargement of a ritual system already established with a significance so spiritual, and its acceptance by the people at a time, too, when their spiritual insight was rapidly advancing, can be accounted for satisfactorily only by the presence

of the prophetic office and of prophetic authority. But, whatever may have been the relations of the prophets to the priesthood, one thing is certain, — that the more we study the past of the Hebrew nation, and compare it with that of any other, the more conspicuously do Moses and Elijah, Abraham and David, Isaiah and Ezekiel, stand forth as qualified and commissioned by supernatural gifts, and so qualified as to speak in the name of God to the men of their times and to the men of all times. What their message was to their own people, and what through them it is to us, may be questions which it is not always easy for us to answer in detail. Some of these questions it may not be possible for us to answer at all; and yet, in the light of modern criticism, we may hold with firmer faith than ever before, that the God who “of old time spoke unto the fathers in the prophets by divers portions and in divers manners” is the same God who “at the end of these days hath spoken with us in his Son.”

The special researches which are now prosecuted with such zeal into the documents which have always been and still continue to be the treasure and the pride of the Jewish people, all serve to establish their high antiquity. The discovery of other documents, whether unrolled from mummies, or transcribed from tablets of clay, is constantly bringing the elder days nearer to our vision, and connecting the Hebrew people with their contemporaries by manifold relations which glow with manifested reality. They attest the high antiquity of the Hebrew story and its essential truth in ways and by evidence which could never be so well appreciated as now. Whatever else is uncertain, of one thing we may be confident; and that is, that the existence of the Hebrew nation, with their conception of Jehovah as their national God, — while yet in a real and spiritual sense he

was the rightful though the rejected sovereign of other nations,—with their belief in his miraculous presence and constant faithfulness, with their ritual, their sacrifices, and their hopes, with their history of backslidings and recoveries, can be in no way so satisfactorily explained to any man who believes the supernatural agency of God to be possible as by the belief that God was supernaturally present with Israel in fact. To this conclusion we believe that sooner or later all critics and students of history must come. Thither the stream of tendency must bring them all at last, and with them the consenting judgment and the warm approval of all intelligent and right-thinking men, who do not profess to be scholars, but who are yet competent to understand and sympathize with any great movement in the world's thinking and feeling.

5. These considerations very naturally suggest the inquiry, What evidence is furnished by the *culture* and *literature* of the times in respect to the relative strength or weakness of the believing spirit, and the consequent energy and prospects of faith in Christianity and in Christ? We include under literature all those intellectual products which by their perfection of form, their attractiveness to the imagination, and their popular character, are fitted to move and sway the minds and hearts of the more or less cultured part of the community. The literature of a period is in one sense the reflex of its beliefs and its sentiments, representing, as it does, all its phases of activity from its profoundest reflection up to any sparkling play of wit or trivial sally of humor. In a most important sense, it forms and fixes the principles of the times, by its re-acting force, as it expresses these in its pithy utterances, holds them by its arguments, pictures them in its imagery, makes them

brilliant by its wit, or burns them into the heart by its eloquence. What Plutarch in a memorable utterance says of poetry is eminently true of literature, that "it mediates between philosophy and life," if we understand by philosophy the solid convictions of the schools, and by life the practical sentiments and impulses which control the mass of the community. Literature in these times has a wider field of activity than ever, and more properly assumes to be representative of our general and pervasive life. The time was when it was a separate estate, more or less an independent and lawless power, which tyrannized over the consciences and tastes, and arrayed its independent energies against the church, the state, and whatever of morality or prescription was dependent on either. This explains why literature is thought by many to be the natural and necessary foe of faith and spirituality, and in its very genius to be necessarily destructive. The self-called wits of the previous generations in England are conceived to have been freethinkers of necessity for no other reason than that the Christianity of the church was an inviting target for their wit and ribaldry. The enormous destructive power which was wielded by the literary class in France cannot easily be over-estimated. Literature is not, however, necessarily destructive or unbelieving, especially in countries in which thought is free, and the expression of it is untrammelled; and letters are at once the arena and the instrument for those assaults and defences of which opposing parties avail themselves. In the earlier days of England's better life literature was believing and devout, for the reason that the best thought and feeling glowed with such intensity that it could not but find expression in the highest forms; and hence literature, though often sensuous, and passionately free of speech, was character-

istically religious. When the faith of England was less fervent, and her morals became rotten, poetry and criticism could not but emit a rank and noisome odor. When religion revived again, a better school of poetry revived with it, criticism became more self-respecting and considerate, and philosophy more profound and religious. Whatever may be said of the literature of the present generation, it cannot be justly charged with indecency or indecorum of sentiment, with flippant scepticism, or rude blasphemy of speech. Its moral sympathies are elevated, and its language is studiously decorous and reverential. The spiritual truths which faith accepts, and the faith which warmly cleaves to them, are both honored with studious respect. The Christian motives, the Christian life, the characteristically Christian virtues, are warmly recognized as the highest and purest of all human experiences, and the nearest real approximations to the ideals of ethical and spiritual realization. It is not too much to say also, that the philosophy, the history, the poetry, and the criticism of the present era are, to a large extent, positively and avowedly Christian.

If we exclude science and philosophy, as we properly may, we find that the only considerable exception to the prevailingly Christian character of English literature is its criticism. Inasmuch as the age itself is characteristically critical in all its activities, it ought to occasion no surprise that its critics by profession should often be questioning and sometimes sceptical; nor, indeed, that the attitude of those writers who study point and effectiveness should often be negative and even sarcastic with respect to a positive Christian faith and an earnest religious life. It is an age in which every received tradition, every positive principle, every fashion and maxim even, must be justified by a fresh

analysis of its nature, and a review of the grounds on which it stands. The verities of conscience and of faith on the one hand, by their very nature fundamental and authoritative, and of individual judgment on the other, not only challenge but demand fresh investigation from every man who thinks.

It may be questioned, however, whether these critics by profession and occupation always represent the deliberate convictions of the ablest men, even of a critical generation. Not a few of the ablest and most active of them are young men, whom marriage and a profession will bring into closer fellowship with those facts and truths which experience only can enable them justly to measure and estimate. Very many of the veterans who are justly honored as foremost among critics have drifted into a literary career as a consequence of the morbid sensitiveness which disqualified them for being actors in life, and forced them to be lookers-on, with the consequent defects of mere spectators, upon a drama which demands faith in reality at every turn, whether for the present or the future, whether the action turns upon prudence or duty or courage, or fidelity or prayer or hope. Men who fling themselves out of the ring from any confessed distaste or disqualification are not likely to be the best judges or umpires of the forces which are destined to win in any battle. Emerson, Carlyle, Clough, Matthew Arnold, Leslie Stephen, J. A. Froude, F. W. Newman, and W. R. Greg are all examples of men who take a more or less negative attitude with respect to the Christian history, the Christian verities, and the Christian affections. Their critical negations fairly and truly represent, so far as they themselves are concerned, that collapse of faith which some of them so eloquently portray and even passionately and pitifully deplore. That in speaking for themselves

they also speak for others, and so far represent a distinct phase of modern thought, and especially of our cultured life, cannot be questioned. That this scepticism is real and fundamental and most tenacious, we cannot doubt, and do not care to deny. But we find reason to believe that it is not so hopelessly negative as the painful confessions and the occasional caustic and contemptuous denials of this class of writers would seem to imply. However much of commonly received Christian truth these men fail to accept, they show most unmistakably that there is very much to which, either as symbol or fact, they most tenaciously cleave, and to which they attach a serious significance, — so serious that without it the earth would be to them a waste, life a dream, and man a contemptible enigma. While the Christian theology, the Christian church, and the Christian emotions and activities awaken but feeble responses of sympathy, the Christian patience and self-denial and reverence and self-control are more than ever admired: they are even worshipped, — sometimes, it would almost seem, in place of the Christ who first exemplified and inspired them. What does all this signify, except that the best ideal of what a Christianized humanity should become has taken too strong a hold of the best side of modern criticism ever to be eradicated by any influence, whether open or subtle, whether direct or indirect? Perhaps this critical scepticism is but a one-sided manifestation of that scrupulous caution in judging of evidence which the Christian love of truth originally inspired. Possibly this want of sympathy with the ordinary manifestations of Christian life is largely and justly to be ascribed to the glaring inconsistencies and defects of this life as estimated by these keen-eyed and unsympathizing observers. The distorted and grotesque images of the Christian life, which are reflected by this sensitive ideal-

ism, when tested by what it ought to be, may incapacitate these critics from candidly judging what it is in fact. The church itself, with all its zeal and saintliness, is by no means so pure or so wise in its earthly manifestations of the divine life as not to give abundant occasion for the sharpest criticism on the part of its sympathizing friends. It is not surprising that its less sympathetic observers, especially those who are critics by occupation, should at times flood it with showers of sparkling satire. And yet, were not its faith and life a positive and an augmenting power, its defects and inconsistencies would attract less attention, and awaken a feebler criticism.

6. This brings us to the very portals of the church itself, and bids us look into the inner sanctuary, and ask with somewhat fearful solicitude whether faith glows or smoulders upon the altars within, well knowing that so will faith weaken or prevail in every other department of human activity. We find to our surprise, that, in the judgment of not a few, the saddest indication of a hopeless collapse of faith is discerned by many in a *general weakening of orthodoxy* among so-called Christian believers. The creeds which were once held as so sacred are now freely, if not profanely, criticised. Some of the discriminations and watchwords of the Protestant theology are resolved into the traditions of scholastic speculation, or the compromises of practised dialecticians. Christian doctrines which are rightly regarded as fundamental are propounded in novel phraseology, are explained by new analogies, and are defended by new proof-texts. With some of these texts, which have been cited without question for generations, the new exegesis deals in merciless forgetfulness that they have been made sacred

by the associations of centuries with the catechism and the pulpit. Nay, logical theology itself and creed-making are publicly denounced as a device of the Devil; and one form of stating the Christian faith is declared to be as good as another, where all are necessarily so imperfect and one-sided.

It is not easy to prove to a certain class of alarmists, that even these extravagant speeches are only the foam of a great movement of Christian thinking, which bodes good rather than evil to Christian theology and Christian catholicity. It is difficult to allay the honest fears of men who cannot distinguish between those reflective or reasoned statements of religious truth which must characterize every formulated creed and school theology, from those picturesque and emotional expressions of religious truth, largely in popular language, with which the Scriptures abound. Even if this difference can be made clear, it is not easy to demonstrate, that with the revolution in the principles and rules of exegesis, together with what is almost a revolution in the principles of religious philosophy, the old methods of handling proof-texts, and of translating their import into catechetical and theological propositions, must be modified in some essential particulars. And yet the conviction of this necessity is confessed by the deeds, if not in the words, of the majority of Protestant theologians now living. Most of them, certainly all who have the ear of their generation, whether consciously or unconsciously, whether avowedly or disavowedly, use proof-texts in a manner which differs materially from the traditions of other generations. They accept, if they do not acknowledge, the principle that the Christian theology of an age must be more or less manifestly the product of its philosophy conjoined with its scientific interpretation of proof-texts. These new

principles and methods are as certain to gain ground as Christian and philosophic truth are certain to triumph. So fast and so far as they prevail, they must essentially modify the unquestioned authority of traditional creeds and formulated theological systems. The faith of the church of the remote future and of the near present may be less dogmatic and unquestioning than formerly; and yet for this very reason it may be more discriminating, catholic, and devout. While we are not so simple as not to be fully aware that faith in Christ as a Person involves faith in a possible creed and a reasoned and formulated theology, we contend that the one may exist without the development of the other, and that, under certain circumstances, faith in Christ and in Christian truth may increase in proportion as zeal for a system or a creed declines. While it is certain, that, when faith in Christ declines or vanishes, faith in Christian creeds and theologies must go with it, the converse is not necessarily true.

We contend that this increased catholicity, or, it may be, indifference, of Christian believers in respect to theological definitions and controversies is not necessarily an indication of diminished loyalty to Christian truth, or to the great Teacher of the Christian Church. It may, and, to a large extent, we think it does, arise from a profounder reverence for his majesty, a more loving gratitude for his mercy, and a firmer faith in the power of his life and death. The presence of these practical emotions may show that the faith of the church is the more tenacious and fervent with respect to what it holds just in proportion as it thinks less of many of the propositions or catchwords which have been flaunted so conspicuously on the banners of the church militant, or have been shouted from the throats

of its brazen-voiced leaders. It does not necessarily follow, because the five points of Calvinism are made less of than formerly by those who call themselves Calvinists, or because the counter-propositions of this or that school of Arminians are less confidently asserted as containing the last and best words of Christian truth, or because questions of church organization or church millinery or church ritualism are now esteemed of less vital importance than formerly, — it does not follow from all this, that faith in whatever truth commends God's authority or his love, or in the order and decency of worship as of supreme importance, is weaker now than it was two generations ago. We ought to say more than this. We ought positively to affirm, what every enlightened philosopher or theologian knows and believes in his heart of hearts, that the methods of conceiving, stating, and defending theological truth have immensely improved in the last two generations; that, as theology has become more modest and less dogmatical, it has become immeasurably more confident and strong; that what it may have conceded as uncertain, and as possibly incapable of positive definition or argument, has been more than supplied by what it can affirm with augmented confidence, and urge upon the conscience and heart with fearless and rational positiveness. Moreover, we also believe, that, with all the flippancy and scepticism of the public mind in respect to much that is asserted as Christian and vital truth, there was never a time in which the defenders of Christian supernaturalism, who are competent and willing to discriminate between strong and weak arguments, were certain to meet with a more ready response in the understanding and hearts of intelligent men. It is true that formal and traditional arguments pass for little in these days. The droning repetition of old

statements of doctrine, in which there is no fresh and modern life, is listened to with indifference, and dismissed with contempt. The platitudes of unctuous exhortation are stale, flat, and unprofitable. The repetitions of the so-called evidences may be as dry as remainder biscuit; and yet it may be true, that the arguments of an earnest believer, and, above all, the life of a man or woman of fervent faith, never had greater power to waken trains of convincing reasoning, and to urge fervent appeals, than at the present moment.

7. Our argument had brought us within the portals of the church, and led us to inquire whether faith was still glowing upon its altars. We had almost forgotten that faith by its very nature cannot be limited to priests and teachers, but in its very nature must live or die in the hearts of the mass of living worshippers. The question whether faith is suffering a fatal collapse, cannot be answered till we have discovered how far and with what energy it animates and directs *the life of the Christian Church*. We have examined the atheistic and agnostic science and philosophy, the new-fangled ethics, the learned and the literary criticism, and the shifting theology of our times, in order that we might ascertain how far faith may have relatively declined, and what are the signs of its dissolution, or, it may be, of its revival. It remains for us to inquire what indications in respect to its recovery or decline are furnished by the religious life of Christendom. Our readers will hardly suspect us of attaching too little importance to the influence of speculative opinions and literary associations. But, while these react with enormous power on the thinking and feeling of every generation, they themselves are also to a large

extent the creations of the spiritual and ethical life of a generation. The great thinkers and writers of every time were each trained in a home where faith glowed or smouldered, where God was worshipped or was dishonored, in a community where Christian duty and inspiration were honored or scorned, at a school or university where science and letters fostered or sneered at faith and devotion, and by teachers who honored or denied God and Christ. The lives of Kant and Schleiermacher, of Voltaire and Rousseau, of Mill and Parker, show that those speculative opinions of theirs, which moulded the opinions of one or more generations, were themselves largely determined by their personal spiritual and ethical life.

If the leaders of thought often determine what the people believe, the faith of the people is as often expressed in what their leaders teach. Faith can never die out of the science, the philosophy, the ethics, and the literature of a people so long as faith is cherished in their hearts and rules in their homes. If, then, we are to find decisive indications of a popular collapse of faith, we must find them in a decline in the spiritual and ethical life of the Christian church, and in the reflex of this decline in the waning respect of the community for sincere and earnest Christian living and sacrifice. We couple the two together, for we shall always find the two together so soon as the partisan or persecuting age has gone by. What, then, shall we say of the Christian life at present as an evidence of the earnestness of the faith beneath? and what of the heartfelt respect for Christian earnestness as a pervasive impulse in the community?

First, what is the relative tone and strength of the Christian life of the present day? Many things may be said, and said truly, in criticism and satire of its shal-

lowness and its inconsistencies, of its fickleness and its mistakes, of the want of judgment in its zeal, and of the want of zeal with its judgment, of its pitiful lack of practical wisdom, and its more pitiful lack of Christian simplicity. The unsympathizing critic has reason to be offended if not disgusted at times at the strange motley of this-worldliness and other-worldliness which it wears, at the flashy character of its excitements, and the more flashy character of its exhorters and pulpit mountebanks. But suppose we look beneath, and ask ourselves about the patient continuance in well-doing of the multitudes who seek for glory, honor, and immortality in a secret life which is hid with Christ in God, or endeavor to do justice to the purified atmosphere of those thousands of humble but happy Christian homes, in which Christ is honored as supreme, and is never forgotten by day or night, however hard and obscure may be the lot in life, or limited the sphere of thought or action. It would not be easy to compute the "potential energy" which slumbers in the faith of these myriads of believing souls, but which now and then makes itself felt when times of stress come upon the land. Let it be granted that the forms of its acting may occasionally reveal narrowness and ignorance, and that with the pure fire of genuine love there may be mingled much strange fire of fanaticism and folly. All that we are concerned to know is, whether the genuine faith of men is dead or dying. In the midst of manifest uncertainty and fickleness of opinion, do the men who profess to believe in God and immortality and the gospel believe less firmly than in former times? If they are less positive in respect to many points, do they hold less confidently and warmly to the truths in which a man cares to live and to die? Let the answer be found in the practical fruits of Christian living which abound in the individual and

social life of the present day, and which are confessedly the products of faith in a present and living Christ. After all the concessions which we must make in respect to the unwisdom and fickleness of the external forms of Christian living, we are constrained to say that there was never a time when faith in Christ and in distinctively Christian truth was so energetic a force in individual and social life as it is at the present moment. Its energy was never so great, its modes of action were never so varied, its penetrating and re-creating force was never so widely felt, never so transforming and so all-subduing, as at this moment; and its wise applications to the complex relations of human activity in individual and social life were never so manifold and so beneficent.

And what is thought and felt in respect to the energy and earnestness of this faith by those lookers-on who are severe and not always sympathizing witnesses? There is plenty of satire for its follies and mistakes, often well deserved; there is keen distrust of its overweening pretensions; there is many a secret joke if not an open rebuke at its sharp practices; there is much severe and sometimes uncharitable questioning of the motives and professions of inconsistent zealots; there is much honest and more affected wonder that the church is not more unworldly by men who profess no other godliness for themselves than the worship of gain. But it is very rare that in any community, however small, there are not found a few men and women who are acknowledged to be worthy Christian disciples, and whose worth enforces respect for the faith which they profess. We do not deny that there are points of serious weakness in the Christian life at the present day, — points of weakness which but few are quick to discern, or care to criticise. In this country and in all countries

these are largely incident to the rapid material developments of the times, and the forms of individual and social culture which must attend such a growth. This material growth has also been attended by the development of science, inventive arts, and literary tastes at even a more rapid pace, which has partially withdrawn the allegiance of many from spiritual aims, and the higher ends and types of life. With the development of physical science, though in no sense as its legitimate effects, a shallow materialism, a pretentious and more superficial atheism, and a still more shallow ethics, have made more or less headway, all of which have weakened the legitimate force of the higher truths, and have tended to satisfy men with thoughts and cares for the present life. That the Christian church has so well maintained its allegiance to its Master under temptations so manifold and so dazzling is, perhaps, more surprising than that it has yielded so much to the spirit of the times.

But let it be granted that the Christian church remains true to its Master, and retains much of the freshness of its faith and zeal; does it follow, that with the decay of faith among men of letters, and its collapse with men of science, it will not sooner or later also fail among the intelligent and reflecting in common life? How can it be reasoned that the natural originators and directors of thought shall not finally control the opinions of all classes, and so the old faith shall not gradually die out from root to branch of the intelligent life of the community? How can it be contrariwise that the sturdy or the quickened faith of the masses of men shall make itself felt by way of re-action against the dicta of scientific associations and metaphysical dogmatists and literary critics? Can faith in these days make headway against reason, and especially against the

instructed reason of positive science and the illuminated time-spirit? These questions are often asked, and they admit and require a distinct and positive answer. We answer them as follows:—

The lines of evidence and argument which are decisive of the great truths with which faith need concern itself are equally open to all men who are capable of cool reflection. Science often hinders rather than helps to the exercise of such reflection by limiting the attention to special activities and special relations, by the glare and bewilderment of brilliant discoveries, by the narrow conceit of independence or novelty of opinion, and by the excitement attendant upon the reception of a paradoxical theory. The activity of its defenders and the novelty of its subject-matter may so pre-occupy the mind as to shut out those familiar relations which would decide the argument with a simpler and more limited understanding. Faith, so far as it is an intellectual process, being when philosophically conceived either *an intuitive or inductive act upon moral or spiritual data*, requires concentrated attention to a few comprehensive but easily apprehensible facts and relations. These facts and relations are given, or, rather, they are offered, to every man's experience and to every man's reflection. They concern God, duty, immortality, personality, moral perfection, sin, guilt, redemption on the one hand, and the acts and manifestations of God in providence and human history which are suited to man's condition. The believer in common life would only ridicule the atheism of Physicus, and, having no special reverence for authority, would only respond, "The fool hath said in his heart, No God." He smiles at the laborious piety of Mr. Spencer in charging impiety upon the man who thinks of God as a father, and professes to believe that he may worship him; for to him personality is a very

positive and dignified fact, and he cannot even understand what Mr. Spencer means by dishonoring it. The new ethics he practically rejects and abhors; because he has rights to defend and sacred duties to perform, and a private and family and social life to live, with its manifold obligations and its needed laws and restraints. His difficulties about the agency of God in the affairs of men were all settled when he had occasion to use prayer, or to trust in the guidance of Providence. A revelation in which there is no supernatural would be improbable and one-sided to him, — too vapid and mean either to live or die by. Critical difficulties about the Old Testament or the New, and the solutions of them, he leaves to scholars to decide; having ample warrant for the truth which, as a believer in Christ, he is called to accept. Having decisive reasons for all that he is called on or able to believe, his faith is completely rational.

He may be perplexed and disturbed by what he hears and reads of scientific atheism and philosophical naturalism: but if he falls back upon what he believes, and confines his attention to this, and the reasons for holding it, his faith is unmoved; and out of a convinced understanding he fights the battle of life, by faith in his divine Master. More than this: he helps to keep faith alive on the earth, as he gives his testimony to that truth of which he has become doubly convinced by the most satisfactory of all trials, — the trial of personal experience, the trial of a life which is hidden with Christ in God, and often the trial of a death which is anticipated and overcome by faith.

The strength of faith in any period and in any community depends on the number of individual souls who accept these truths as practical principles, and the energy with which their inner and outer life are controlled by them. Whether the argument in respect to the other

questions and lines of thought seems to be the stronger or weaker, or whether fewer or more individuals take the unbelieving or the believing side, so long as earnest men believe in the supernatural Christ with rational conviction induced by moral and spiritual evidence, and act out their faith in energetic and zealous Christian living, faith can never collapse. It is, then, in this direction that the activities of all believing men should be turned if they would gain strength for their practical convictions from the broad and obvious grounds by which Christianity must stand or fall. It is in this sense that the truth is always so significant, and pre-eminently at the present time, that Christianity is not a philosophy, nor a history, nor a theology, but a Life. It is because Christianity is attacked from so many quarters, and what is assumed to be essential in it is assailed with so much zeal and plausibility on grounds which are familiar to but few, that these strong arguments should be brought into the foreground, while those which are limited to specialists, or are of inferior significance, should be occasionally or sparingly used. It were better to abandon every outwork and redoubt, even the strongest, and most capable of successful defence, than to be driven out of a single position. The loss of a weak position is nothing, but the disgrace of not having known it to be defenceless is injurious to any cause. The real weakness of the Christian cause, as it is often defended, lies in the ignorance on the part of its friends of the real strength of the arguments by which it stands. Whether still other sharp lessons of temporary defeat or disgrace shall be needed to enforce wiser judgments remains to be proved. While the defenders of the Christian faith, as we have argued, have no reason for fear, or even for misgiving, they have no occasion for bravado. The frequency with which these

obvious precepts of wisdom have often been disregarded gives point and emphasis to the remark, that one of the most convincing proofs of the divine authority of Christianity is the fact, that it has survived so long in spite of its defenders.

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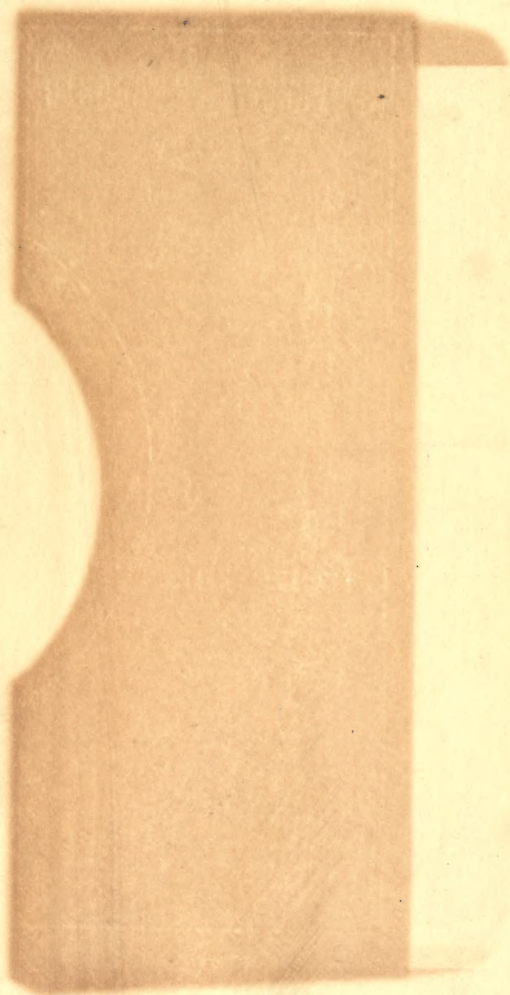
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